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DECORATION

CONSTRVCTION

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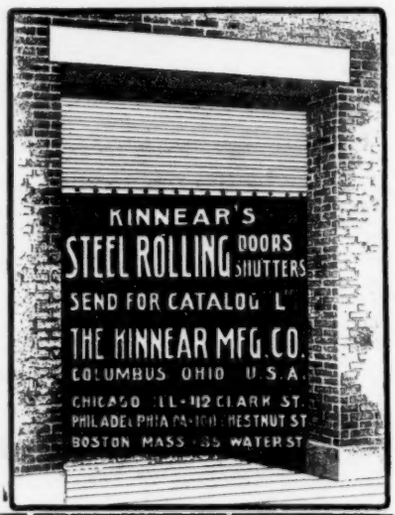

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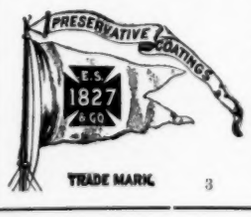

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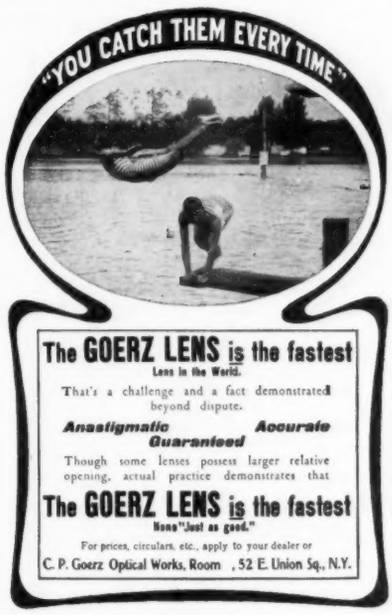
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SOCIETY OF BEAUX-ARTS ARCHITECTS.

D. Despradelle, architect, Professor of Architecture, Massachusetts Institute of Technology, will deliver a series of fourteen lectures—being the first half of a course which he will complete next year—at the lecture-room of the Y. M. C. A., 23d St. and Seventh Ave., New York, beginning at 8 o'clock on Friday and Saturday evenings, March 3d and 4th, and on every following Friday and Saturday until and including April 15th.

Admission will be had only by transferable tickets, which may be obtained by mail from Mr. C. G. Livingston, 3 E. 33d St., secretary of the committee.

This course is open to all architects and draughtsmen as well as to the students of the Society of Beaux-Arts Architects.

LLOYD WARREN, *Chairman.*
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BROOKLYN CHAPTER, A. I. A.

The Brooklyn Chapter of the American Institute of Architects will hold its fifth annual exhibition at the Pouch Gallery, Clinton Ave., Brooklyn, April 7 to 22. Exhibits of drawings, photographs, sculpture and objects of industrial art are desired from all interested. Detailed information will be sent to intending exhibitors on application to Mr. W. A. Parfitt, secretary of the Exhibition Committee, 26 Court St., Brooklyn. Drawings for illustration in the catalogue should be sent to Mr. Henry Clay Carrel, 1123 Broadway, New York City.

The Chapter will hold its dinner on the evening of April 8, and a ladies' reception on the 10th.

BROOKLYN INSTITUTION OF ARTS AND SCIENCES.

The Museum of the Brooklyn Institute of Arts and Sciences has been invited by the Architects' Society of Rome to make an exhibit in Rome, under the auspices of the society, of the photographs of mediæval architectural refinements which represent the observations of Mr. Wm. H. Goodyear, Curator of Fine Arts in the Brooklyn Museum. One hundred and fifty feet of linear hanging space have been assigned for this Roman exhibition, which will open on March 15 and continue until April 15. The invitation has been accepted and duplicates have accordingly been made of 68 of the large photographs, which are on public exhibition in the Brooklyn Museum. The photographs were shipped from Boston on February 18.

Forty of the subjects represent Italian mediæval cathedrals, including 14 for St. Mark's at Venice and 8 for the Pisa Cathedral. Five subjects represent early Byzantine churches at Constantinople, and 23 subjects represent French Gothic cathedrals, including 8 for Notre-Dame at Paris. Fifty-six of the negative originals of these pictures were personally made by Mr. Wm. H. Goodyear, and the remaining 12 were taken under his direction. The exhibit also includes photographs of 8 plans and elevations of the Pisa Cathedral in the original size of the cartoons of survey (some 36 inches in length), which were made under Mr. Goodyear's direction in 1895.

In the representative character of its membership for the given city, the Roman Society of Architects (the "Associazione Artistica fra i Cultori di Architettura, Roma") may be compared to the Architectural League of New York, having 88 active members who are resident in Rome. Sculptors and painters of monumental work are included in the active membership and the associate membership also includes all the prominent antiquarians and archæologists of Rome.

Aside from an exhibition which was made by the Brooklyn Institute at the Liverpool meeting of the British Science Association in 1896, this will be the first occasion on which photographs of architectural refinements have ever been shown in Europe. The Boston Public Library made an exhibit last April of the Brooklyn Museum series for the French cathedrals.

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AMERICAN SOCIETY FOR TESTING MATERIALS.

A report on "Protective Coatings for the preservation of Iron and Steel" was presented at the Atlantic City meeting of the American Society for Testing Materials (Washington, D. C.) in June last, which embodied the views of the different members of Committee E, of that body, on this most important subject. Since the annual meeting the committee has been working along the lines stated in the report, and the conclusions only emphasize the earlier statements of the committee.

The required investigations were further crystallized at a recent meeting of Committee E, when it was resolved that: "The sense of this committee is that standard methods of making service tests should be formulated and adopted in order that laboratory tests may become of real value in determining the efficiency of protective coatings."

Sub-committees were also appointed to investigate and report on the following subjects:

"Standardization of Service Tests," Mr. G. W. Thompson, chairman.

"Tests to Determine Permeability of Film," Dr. C. B. Dudley, chairman.

"Preparation of Surfaces before Painting," J. W. Whitehead, Jr., chairman.

"Investigation of Field Tests," Mr. W. A. Polk, chairman.

"Permanency of Paint Films," Mr. Malcolm McNaughten, chairman.

The work of the sub-committees covers the chief fields for investigation, and provides for an almost unlimited amount of study and experimental work.

It is felt, however, that this concentration of effort will hasten the solution of some of the problems under investigation, and although a final report cannot be expected for some years, still each year's work will add to the sum of knowledge on the subject.

S. S. Voorhees,
Chairman.

BROOKLYN CHAPTER, A. I. A.

The fifth exhibition of the Brooklyn Chapter of the American Institute of Architects will be held at the Pouch Gallery, Clinton and Lafayette Aves., Borough of Brooklyn, City of New York, from Monday, April 10, to Saturday, April 22. Last day for receipt of entry blanks, Saturday, March 18. Last day for reception of exhibits, Saturday, April 1. Exhibits discharged Monday, April 24.

The exhibition will consist of architectural drawings in any rendering, and of photographs and models, and objects of industrial art.

Photographs of the exhibitor's original work are especially requested, but may be accompanied, however, by plans or other explanatory drawings, separately framed or mounted.

Models of façades, and of details, carving, etc., will also be received. The former, in connection with rendered elevations or photographs of the same subjects, are particularly desired.

All drawings must be either framed or properly mounted. The omission of glass on all drawings is requested. All works accepted by the jury must remain until the close of the exhibition. No conspicuous title shall be placed on any exhibit, and the committee reserves the right to change any title unduly conspicuous.

Each exhibit must have securely fastened to it the label furnished for that purpose by the committee, which label, and entry slip, shall be carefully and correctly filled out with the author's name and address and the full title. It is particularly requested that both the label and entry slip (one for each drawing) be printed in and not written, and that the name and title be exact, as the entry slips will be used in indexing and compiling the catalogue.

All works will be covered by insurance effected by the Brooklyn Chapter from the time they are received until they leave the exhibition rooms. The greatest care will be taken by the Chapter of all exhibits sent, but it will not be responsible for accidents.

The Brooklyn Chapter will, without charge, collect and return direct to the exhibitor's address all works from the Boroughs of Manhattan and Brooklyn, City of New York.

Exhibits from points other than the Boroughs of Manhattan and Brooklyn, City of New York, may be sent direct to the Pouch Gallery, addressed to the Brooklyn Chapter, or to the following consignees: William S. Budworth & Son, 424 W. 52d St., New York City, or to the Artists' Packing & Shipping Co., 139 W. 54th St., New York City.

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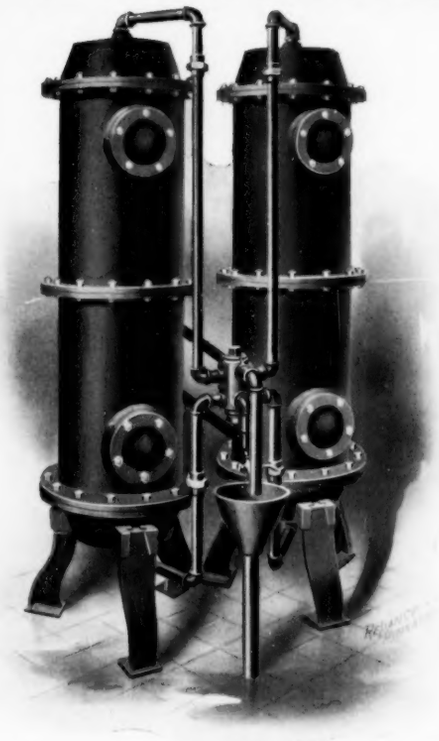

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SYNNADIAN MARBLE.

There has just been received in this city, says the New York *Evening Post*, a consignment of Turkish marble. This is what the stone is called in the prosaic language of the ship's manifest, but the material was known to the ancient Romans as *lapis Synadicus*, and to the inhabitants of Phrygia, where it was quarried, as *lithos Docimæos*. It is the famed Synnadian marble, widely used in Rome for the decorative features of temples and public buildings. Strabo speaks of the high repute in which it was held, and tells of columns and slabs having been transported to Rome with great trouble and expense. The quarries were between Synnada and Docimæum, towns of Phrygia, northwest of the plain of Ipsus, near the modern Bulwudun. The Synnadian marbles were of various colors, but the variety to which the name is generally applied is a white with red spots. The present importation, however, is a white statuary marble. It is an interesting commentary on the decadence of the Oriental artisan that, while huge blocks suitable for columns were taken to Rome before the time of Christ, the modern quarrymen, with access to improved machinery, can turn out only small blocks. Not a single one of the stones which have just reached New York contains a cubic metre, and most of them measure only a few feet.

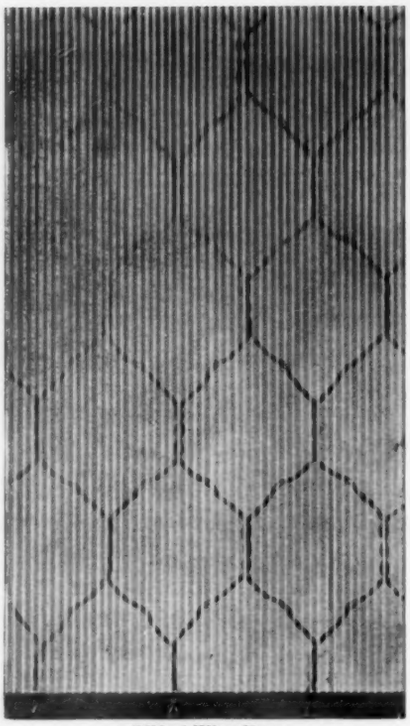
Although the Synnada quarries have never been lost or forgotten, they have been neglected because of a lack of transportation facilities. Now it is believed that the Smyrna Railroad will render the marble available for the Western market, and an effort will be made to open and work the quarries. The Imperial Ottoman Bank of Constantinople has become interested in the venture.

The great demand for unique decorative material for modern buildings has led to the search for rare marbles in all parts of the world. The most promising fields for these are in Greece, the Ægean Archipelago, Asia Minor and Egypt. These countries were all carefully exploited by the master builders and sculptors of antiquity. Scores of quarries that were worked two thousand years ago, but the very location of which was forgotten, have been rediscovered and reopened. Several years ago the famous quarries on the Island of Eubœa, producing the Cipollino, or onion-skin marble, were found just as they had been left by the craftsmen before the Christian era. Crude bronze tools and roughly shaped columns were lying in the trenches. These quarries are now being vigorously operated, and the product has been used in New York. The old quarries on the Island of Scyros have also been recovered, and the rich, red-mottled marble is now held in high favor in this city. When Athens was in its glory one of the choicest treasures of the builders and sculptors was the cream-white marble from Mt. Penelicus. Through the generosity of a rich Athenian banker, the Pantelicon quarries, idle for many centuries, were opened to furnish marble for repairing the Stadium at the time of the revival of the Olympian games. They are still operated, and the marble has been used for wainscoting in a number of the finest of the recent office buildings in the city. So it has come about that modern American architects are taking tribute from the very same veins of marble that yielded material for Praxiteles and his followers.

BUILDING NEWS.

(The editors greatly desire to receive information from the smaller and outlying towns as well as from the larger cities.)

ANN ARBOR, MICH.—Plans are under way by Malcomson & Higgenbotham, 404 Moffat building, Detroit, for a 3-story brick and limestone high school building for the Board of Education. Slate roof, steam heat, electric light, nickel open plumbing, oak interior



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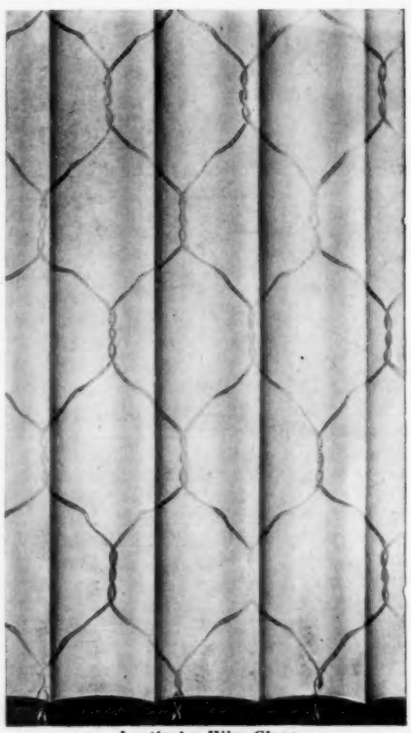

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finish, hard plaster, etc. Estimated cost, $100,000. Plans will be completed in March when the board will advertise for sealed proposals.

BALTIMORE, MD.—It is reported that R. H. Frazier & Sons will erect an office building on the site of the old Baltimore Hotel. Estimated cost, $90,000.

BEAUMONT, TEX.—Local capitalists are having plans prepared by F. W. Steinmann for the erection of 5-story hotel building to cost $100,000.

BROOKLYN, N. Y.—Mr. Meyer Suckenwick, 4214 Third Ave., has had plans prepared by Charles Infanger, 2634 Atlantic Ave., for four tenement houses to be built on the north side of 44th St., 300 feet east of Third Ave. Plans provide for 4-story buildings, 19x80 feet, to contain nine apartments each. They will be built of brick and stone, with tin roofing. Cost, $60,000. Owner superintends and will buy all material.

It is reported that the Union Heights Realty Co., Ave. S and Homecrest Ave., will build 15 dwelling houses from plans by Architect George F. Rosen, 189 Montague St. They will be located on both sides of E. 14th St., south of Ave. S, and on the east side of E. 13th St., south of Ave. S. They will be 2-story and attic buildings, of brick and stone, with shingle roofing, hardwood finish, and the usual improvements. Cost, about $50,000.

CHICAGO, ILL.—A store building will be erected for the Columbia Electric Vehicle Co. at 1328 Michigan Ave. Designs by Richard E. Schmidt, 163 Randolph St. The building will be 2 stories, covering an area of 88x170. It will be constructed of brick and stone and have composition roof. Cost, between $40,000 and $50,000.

At Paulina St. and Waveland Ave. a 2-story apartment house will be erected for H. F. Tonsdell, 4360 North Paulina St., after plans by Thomas H. Wing, 185 Dearborn St. It will be of brick and stone, 40x60 feet, with composition roofing, steam heat, etc. Cost, $150,000.

Wm. G. Krieg, 84 Washington St., has completed plans for a church, to be erected on Noble, opposite Chapin St., for the Holy Trinity Roman Catholic Society. Frontage, 112 feet; depth, 183 feet. The exterior will be of granite and pressed brick with tile roof. Cost, about $170,000.

R. S. Smith, 185 Dearborn St., has drawn plans for an apartment house for L. Bigelow. It will be three stories high, 50x150 feet, and cost about $50,000. The front will be of pressed brick, with stone trimmings, composition roof, hardwood finish and floors, steam heat, hot water supply, etc.

CORSICANA, TEX.—Navarro County is arranging for the erection of proposed courthouse, for which $150,000 of bonds was recently voted. Address County Judge.

CHATTANOOGA, TENN.—It is reported that the Bowen-Jewell Company, of Jewell, Ga., is arranging to erect a large manufacturing plant at a cost of $100,000 in this city.

CLYDE, GA.—Bids are invited for the erection of Bryan County's proposed courthouse. Address County Judge.

DENVER, COL.—An 8-story modern office structure will be erected by the Fifteenth St. Investment Co. at 15th and Champa Sts. Cost, $300,000.

It is reported that the erection of a new City Hall, at a cost of about $1,000,000, is under consideration.

DETROIT, MICH.—The Legislature has passed a bill authorizing the City of Detroit to issue bonds for $100,000 for the erection of a hospital for contagious diseases. William H. Maybury, Commissioner of Public Works.

DETROIT, MICH.—Joseph E. Mills has prepared plans for the North Woodward Ave. Baptist Church, to be erected on the southwest corner of Woodward Ave. and Grand Boulevard. The size of the church will be 74x140. The cost will be $75,000. He has also drawn plans for a temple for Rirornde Lodge, No. 202, I. O. O. F., on the northest corner of Baker and Hubbard Sts., 60x130 feet. Cost, $45,000.

DES MOINES, IA.—Letters are being sent out by the Building Committee of the Home Lodge, No. 370, A. F. & A. M., suggesting the plan which they have decided upon to provide the necessary funds for a Masonic Temple. It is estimated the new building would cost $50,000.

EVANSTON, O.—The Walters Amusement Co. has plans in contemplation for a summer resort here. Buildings to cost $200,000 will be erected. R. F. Walters, 1431 Union Trust building, Cincinnati, O.

ELKINS, W. VA.—Dr. L. W. Talbott contemplates the erection of bank building and opera house.

FT. MONROE, VA.—Bids will be received until March 15 for construction of a storehouse here. Information furnished on application. C. P. Townsley, Q. M.

FT. MILES STANDISH, MASS.—It is reported that officers' quarters, hospital, guardhouse, barracks, storehouse and a complete one-company post will be erected here. Cost, about $125,000.

GREENWICH, CONN.—A general hospital to cost $100,000 is to be erected, it is said, on Millbank Ave. Address Robt. M. Bruce.

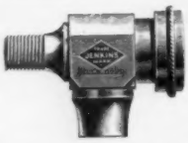
GRANTVILLE, GA.—A press report states that the Grantville Hosiery Mills will build a mill for manufacturing yarns; $75,000 will be expended.

HAVERHILL, MASS.—The erection of a high school, the cost, including site and building, to be about $200,000, is under consideration.

HOT SPRINGS, ARK.—It is reported that the city contemplates erecting $75,000 high school building. Address George B. Cook, superintendent.

INDIANAPOLIS, IND.—It is stated that the Capital City Brewing Company will con-

Continued on page xii.



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IT is a curious commentary on American civilization, as understood by the Government of the moment, that it is easily possible to appropriate ten million dollars for two battleships while it is wholly impossible to secure a similar sum for the erection of forty or fifty public buildings, which, if not actually needed, would none the less exert a certain civilizing influence more in keeping with the traditions of the republic than are the marine ban-dogs on which the money is to be wasted. The arguments against the public buildings are plausible enough: they are not really needed, for the public requirements are already satisfied by paying rentals much less than the interest on the proposed cost; they are mere pawns in the game which Congressmen have to play in order to retain their position among the country's lawmakers—and the salary that attaches to it; and the actual treasury deficit increases. But the deficit is caused by the battleships; if we did not have these particular Congressmen, we must have others of about the same worth, and the buildings, if not at the moment needed eventually will be, and they are not, like battleships, purposed for destruction but for long life.

IF Speaker Cannon were the really shrewd politician he believes himself to be, in place of boldly thwarting the wishes of many communities, he would take example of Mr. Carnegie's method which has had so much applause, because of its supposed effect in fostering the self-respect of a community, and would say to the sponsors of the bills: "If the communities you represent are really in need of public buildings, let them prove it by raising by subscription so much of the estimated cost, and I will help them to get from the Government four dollars for each one they subscribe." Something of the sort, as things are, not infrequently happens, as a building site is occasionally either given outright or provided at a merely nominal cost to the public treasury. The principle of aiding those disposed to help themselves is a good one and in various ways is recognized and applied by the Government, as for example in providing pedestals or a supplementary contribution for the completion of some public statue, or, again, when the United States joins hands with a State or city in carrying on a public improvement, as is practically being done—the improvements of the waterway in Boston Harbor. It would have been of very real and widespread benefit to have the omnibus Public Buildings bill passed, and so it is regrettable that Speaker Cannon did not think of this fairly obvious means of accommodating his practice to his theories.

THE good Bishop of New York and his youthful architects would seem to be, as cathedral-builders, badly out-classed by the youthful German Emperor and his elderly architect, since the great Evangelical Lutheran Cathedral at Berlin, essentially a finished and furnished structure, was dedicated on Sunday last, while a single great arch, a finished aspidal chapel, and a small amount of work on the choir is all, above ground, that shows that the builders of the Cathedral of St. John the Divine, have not been idle during the same number of years that the Berlin cathedral-builders have been so busy. These two structures are always likely to be considered together, for not only were they conceived about the same time but actual work on them began in the same year. Moreover, the cause and purpose of their being are nearly identical, for both, one of them declaredly and the other constructively, were intended to constitute the provision of an adequate glorifying monument to the Protestant religion, one in the metropolitan city of Protestant Europe, the other in the metropolitan city of the Protestant New World. Apart from the liberal-minded purposes of the founders of the two monuments, the fabrics themselves are about as dissimilar as they well could be. Professor Raschdorff has designed a domed Renaissance building of the general type of St. Paul's, and has carried it on under the strenuous impulsion of his impetuous master and the watchful eye of the church-building Empress, without suffering from the delays imposed by scantiness of funds or the annoying interference of trade union leaders. Messrs. Heins & La Farge, on the other hand, are developing a complicated early Gothic building on a much larger plan and a very difficult site, and are hampered because their building accounts have to be liquidated largely from chance individual subscriptions and not from a treasury fed by Government and Imperial grants. The two buildings very well illustrate the law of opposition, for, we think, that, arguing from known premises, most persons would have looked for the Renaissance structure in America and for the Gothic one in Europe.

THOSE who prepared the list of incorporators named in the House bill for the incorporation of the American Academy in Rome have exhibited such

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astuteness and so keen a sense of fitness and the adapting of means to ends that they deserve recognition as diplomats of no mean order. It is a distinguished company, truly, and, as most of the names are well known, we have tried to discover, through classifying them, why they had been invited to lend the weight of name and influence to this undertaking. We find, then, that the eighty-two signatories may be grouped thus: architects, twelve; painters, six; sculptors, five; landscape architect, one; museologists, two; politicians, two; literati, six; educators, eight; capitalists, nineteen; and a longer column, which we head "unknown," includes twenty-one names, which are familiar in a way, but which we do not dare to assign to any particular avocation, so will assume they belong solely to the guild of amateurs of art. But the list is judicious and catholic in its range, and could hardly be bettered. Two facts, however, declare themselves with particular insistence—the architects outnumber the combined painters and sculptors, and Macænas is not only there himself, but is accompanied by abundant understudies.

THE recent English publications record a most curious and interesting case of architectural atavism, in the way of a design for a new office-building for the London County Council which is projector, Mr. A. R. Bennett, M. I. E. E., proposes to place upon a new bridge, to be known as the Temple Bridge, which may be thrown across the Thames, from a point near St. Clement Danes over to the Surry Side. The bridge would be rather a complicated affair, connecting by inclines with the underground tramways as well as with the surface roadways, and all traffic of every kind would have to pass through what might be called the lower story of the county hall. This structure, designed in late Gothic and with a central tower and spire rising nearly five hundred feet above high-water mark, would have a total length of over one thousand feet, and a width of seventy feet or more, so that its three floors would give an office area of some four and a half acres, all admirably lighted, since the bridge would run north and south. Although Mr. Bennett proposes a reversion to a condition very like that of London Bridge in the days of Queen Bess, it is really a very taking scheme that he has developed, even its cost, some five million pounds, not seeming prohibitive to an American. But there are many who will feel that to shut out the beautiful river view with a solid building, however well designed, would be too expensive a job even at one-tenth of the cost. Apparently, although a clear height of thirty-four feet above high water is given to the arches of the bridge, sufficient that is for most river craft, the designer has had in mind the permanent level that may be created by the proposed great dam at Gravesend.

THIS reminds us that Mr. Wheelwright, who designed the great bridge now nearly built over the Charles, between Boston and Cambridge, is much troubled by visions of the probable effect on his design of having the water which the bridge spans stand permanently at a higher level than even the normal high-water line, which he naturally had to take into consideration while studying his design. When the Charles River dam is finished and the up-river basin filled, the voids, which, of course, are the effective element in designing an arch-and-pier bridge, will have a different shape and proportion from any that the designer had foreseen. That this is really a very serious matter from the artistic standpoint will readily be understood by any one who has studied and admired the Paris bridges when the Seine is running between its banks, quietly, and then studied them again when the river level had been raised many feet by the spring freshets.

IF it were possible to ascertain accurately the weight and number of persons on the section of the floor of the African M. E. Church of Zion, on Fleet street, Brooklyn, that gave way on Monday night during a funeral service, causing the death of ten persons and the injury of more than one hundred, it would form an interesting example for use in the discussion that is going on over Mr. Schneider's suggestion that the formulas ordinarily used produce floors of wasteful strength. The building and its floor had been in ordinary use with no evil result for some fifty years and the building inspector's examination of the ruin is said to show that the timbers were in good condition and simply gave way because of overloading. To determine just what weight the floor as designed should safely have endured, and the weight under which it actually failed would afford data of value in the discussion. We do not know whether the congregation in question belongs to the order of "shouting" Methodists, but, knowing the emotional character of the colored race, we think it not unlikely that the effects of rythmic vibration may have been added to the ordinary effect of live load.

A NEWSPAPER item says that a house in Saybrook, Conn., was believed to have been fired by the rays of sunlight focussed on a window-curtain by a gold-fish globe, and speaks of the matter as "curious." It certainly is that, but we believe that fires arising from such causes are by no means rare. Some two or three years ago, the writer's son, while at the dinner-table at Meran, in the Tyrol, called his pupil's attention to the way in which sunlight was being focussed on the tablecloth by a full water *carafe*, and suggested that enough heat was being generated to be dangerous. The lad's father, a university professor, opposed the idea, and as they argued they saw the spot on the tablecloth darken, and then flash into flame, which was handily extinguished by the water that had helped convert the *carafe* into a perfect lens. There are many authenticated cases of fires being caused by the old-fashioned bull's-eyes, once generally used for door-heads and side-lights, and the bubbles in crown and cathedral glass have proved to be equally dangerous. Large bubbles in glass used in the skylights over unfinished attics, places often used for the hanging of women's light dresses, should be carefully avoided, and for the same reason the skylights in hay-barns should be inspected. Probably more than one hay-barn, whose destruction was attributed to fermentation and spontaneous combustion, really was set afire through the agency of a mischievous little bubble in the skylight glass: it is fortunate, therefore, that skylights in barns and stables are not very common.

TESTS OF CEMENT, III.*

TIME OF SETTING AND TEMPERATURES ACQUIRED.

CEMENT, according to current specifications, has set when that state has been reached, after gauging, which enables the material to sustain a certain concentrated load, applied by means of a weighted wire, without indentation of the surface, and the time of setting the intervening period after certain other lighter loads have been similarly sustained, or is judged of by the resistance against penetration of a weighted wire through a given depth of cement.

Masons recognize a "second set," the first having been reached when stiffening of the batch is shown under the trowel. The cement is then retempered, and the subsequent induration called the "second set." A liberal flexibility characterizes these definitions.

By one of the weighted wire methods, used by Gillmore, set has begun when the cement will sustain a load of 46 lbs. per sq. in., and has finished when a sustaining power of 733 lbs. per sq. in. has been attained, using wires 1-12 in. and 1-24 in. diameters, respectively. By another method, in use abroad, the cement is said to have set when it will sustain a load of 427 lbs. per sq. in., using a wire .044 in. diameter. The duration is marked by the interval after the wire will no longer penetrate the full depth of the cement cake, 1,575 ins.

These are arbitrary methods evidently, still they aid in showing the comparative behavior of different brands, and this may be accepted as their chief merit, since the indications are that they actually show neither the commencement nor the completion of this stage.

More or less water used in gauging, of course, affects the immediate consistency of the mortar and, it is also well known, accelerates or retards, as the case may be, the time of setting, according to the current methods of determination. The following abridged table and diagram, taken from *"Tests of Metals,"* 1901, show results bearing upon this subject.

TIME OF SETTING OF CEMENTS, ACCORDING TO CURRENT METHODS.

Brand.	Water, per cent.	Time of setting — Gillmore's method — Initial. h. m.	Final. h. m.	Interval. h. m.	German method — Initial. h. m.	Final. h. m.	Interval. h. m.
Whitehall	20	1 49	5 19	3 30	1 28	4 44	3 16
	25	4 15	6 05	1 50	3 25	5 40	2 15
	30	4 59	7 19	2 20	4 33	6 53	2 20
Josson	20	0 30	4 35	4 05	0 05	3 40	3 35
	25	4 10	6 40	2 30	3 10	6 10	3 00
	30	5 35	8 05	2 30	4 50	7 20	2 30
Norton	30	0 37	2 12	1 35	0 25	1 00	0 35
	35	0 49	3 14	2 25	0 34	1 54	1 20
	40	1 02	5 17	4 15	0 40	3 37	2 57
Obelisk	30	1 40	4 05	2 25	0 25	3 20	2 55
	35	2 47	5 02	2 15	1 49	4 12	2 23
	40	3 15	5 20	2 05	2 50	4 15	1 25

The first and second brands in the table are Portlands, the third and fourth, Natural cements. The sample of "Whitehall" was 22 days old from the time of grinding. The "Josson" is a Belgian brand.

Taking these results for what the methods purport to show, it appears that the "Josson," gauged with 20 per cent. water, had initially set in 30 minutes' time after gauging, final set having taken place at the end of 4 hours and 35 minutes. With the same brand, using 30 per cent. water, the time of initial set was deferred until a period of 5 hours and 35 minutes had elapsed, final set occurring at the expiration of 8 hours and 5 minutes.

According to the other method of determination the corresponding periods were somewhat modified. It will be noticed in each method, when 30 per cent. water was used, that initial setting did not occur until about one hour later than final setting appeared to have taken place when only 20 per cent. water was used in gauging.

It is generally admitted that the recognition of the time when the cement is no longer indented by the weighted wire is an uncertain affair, in which case the responsibility for the vagaries of the table should be shared jointly by the personal factor and the method of determination. The rejection of material for failure to comply with the setting clause of the specifications should be cautiously enforced.

The influence of plaster was shown by some samples of "Star Portland," one of which contained, while the other did not, the usual small quantity of this ingredient, commercially employed as a restrainer to control the rate of setting. Without plaster, when gauged with 20 per cent. water, according to Gillmore's method, the cement initially set in 5 minutes, final set being reached in 15 minutes. With plaster, using the same quantity of water as before, the times of setting were 2 hours 10 minutes and 4 hours 25 minutes, respectively. Using more water in gauging the differences were inconspicuous, and with 30 per cent. water, neither sample would sustain the lighter weighted wire within a period of 5 hours after the time of gauging.

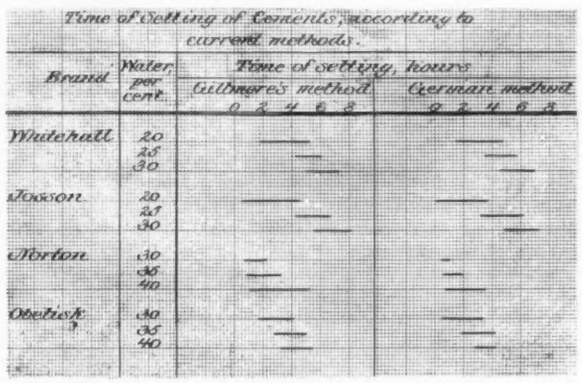
In a later article there will be occasion to refer to the compressive strength of these two kinds of cement, where it will be shown that some portions, at least, had not reached final set for a period of 4¼ days after gauging.

The results on another brand will also be mentioned in which the indurated cement was re-ground and re-gauged after an interval of 6 days 2 hours, and which thereupon displayed cementitious properties in a certain degree.

From these examples it seems that long intervals may follow the time of gauging before the chemical reactions shall have become completed. It is not thought inconsistent with observed data, to infer that conditions of exposure may be such that complete hydration of some cement grains may be indefinitely postponed. Incident to the progressive hydration of the different-sized grains, as indicated in the specific gravity determinations, the finest ones being the first to reach a state of chemical repose, regrinding at a subsequent period might be the means of presenting unhydrated surfaces for deferred action.

The moment when setting actually begins occurs, doubtless, immediately after burning, upon first exposure to moisture, even superficially in the clinker. Fine grinding brings the material into better condition to unite with moisture suspended in the air or with the water used in gauging.

According to current methods, however, that time of setting embraces an intermediate period during the earlier stages of the process, arbitrarily taken, the position of which may be varied at will, and the limits of which are more or less uncertain of recognition. Dry, freshly ground cement may be pressed into the mold by the hand, so as to resist the penetration of the weighted



wire of one of the methods herein described, and according to this method, setting has thereby been inaugurated. Loose cement, poured into a quantity of water and removed after a time will, at its lower end, be found capable of sustaining the heavier weighted wire of the other method, while at the upper end it will not possess sufficient strength to do so, without indentation.

As a result, therefore, of variation in strength, incident to difference in density of structure, one end will appear to have set, while at the other end the setting will still appear in progress, both ends having been exposed to the same conditions, excepting the weight of the superimposed material which affected the lower part. In respect to the query whether current methods afford essential aid in the use of cements, it may be remarked that the results of tests on compressive strength do not tend to enhance their importance.

TEMPERATURES ACQUIRED DURING SETTING.

An evolution of heat accompanies the chemical reactions of the process of setting which is very marked with neat Portlands, less pronounced with Natural cements, and with lean mortars hardly noticeable.

The size of the specimen has an influence on the temperature attained. With a small lump of material a slight rise occurs while in a large cake the temperature may reach and even exceed that of boiling water.

Observations on 12-inch cubes of neat Portland cement show a rise in temperature at the center of the mass as soon as the

*Continued from page

material is placed in the mould. At first the rise is slow, from one to four hours usually elapsing, after gauging, before the rate of increase becomes most rapid, which then continues until the maximum temperature is attained. This occurs at six to twelve hours after gauging. The crest with neat Portlands is sharp, and is followed by a slow decline, the temperature dropping to about that of the atmosphere at the end of a day and a half.

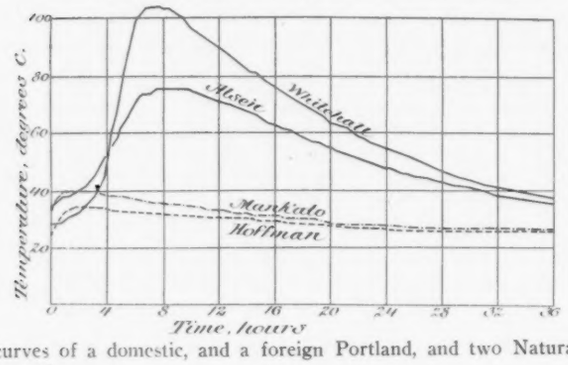
With Natural cements there is a more prompt rise, which is found to be well advanced at the time of the first observation, and may reach a maximum during the first two hours.

The mortars do not gain rapidly in temperature at any time during the process of setting, nor do they reach a very high limit. With mortars leaner than those containing equal parts of cement and sand the rise is but a few degrees.

Referring to the diagrams here presented, No. 1 shows the

No. 1. 12-inch cubes.

Temperatures acquired by cements while setting.



curves of a domestic, and a foreign Portland, and two Natural cements.

The "Whitehall" was twenty days old from the time of grinding, therefore had had little opportunity for partial hydration, and was in a favorable state for the display of energetic chemical activity. It was gauged with 25.2 per cent. of water. The maximum temperature attained was 103.5 degrees C., which was reached 7½ hours after gauging. For nearly three hours the temperature was maintained above that of boiling water. At the end of 8 hours the temperature slowly fell, and one and a half days after gauging was still above that of the atmosphere.

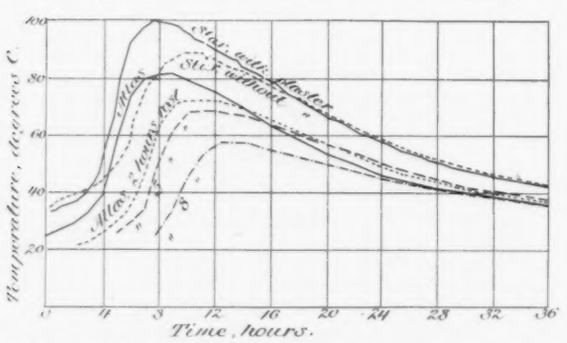
The cube of "Alsen Portland" reached a maximum temperature of 75 degrees C. The age of this cement from the time of grinding was not known, but was at least several months. Assuming that the finer grains had in the meantime experienced an opportunity of hydrating, its lower temperature curve would be accounted for.

The two Natural cements, of the diagram, displayed a prompt rise, but did not reach a high limit, in comparison with the Portlands. The "Mankato" reached 40 degrees C., the "Hoffman" 34 degrees C., the water used being 44.6 and 36.5 per cent., respectively.

On diagram No. 2, are shown two curves with "Star Port-

No. 2. 12 inch cubes.

Temperatures acquired by cements while setting.



land," of which the one having plaster in its composition reached the higher temperature of the two.

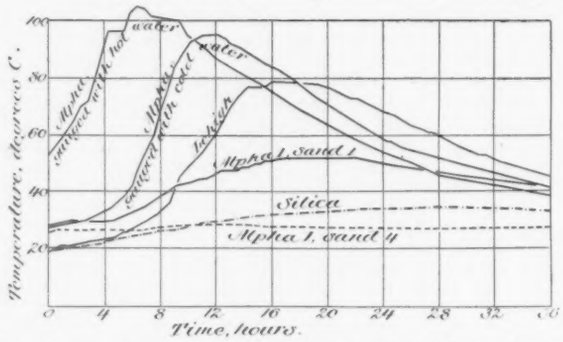
Four curves with "Atlas" cement are shown, of successively diminishing crests. In the first cube of the series the cement was put into the mould immediately after gauging. With the other three cubes the material remained in the mixing bed 2 hours, 5 hours and 8 hours, respectively, before it was placed in the moulds, and allowed to remain undisturbed thereafter.

When spread out in the mixing bed cement does not acquire a high temperature, and at the time these later cubes were formed no marked advance had taken place. During this stage, however, hydration of the cement went on and the lower curves of these subsequently formed cubes represent the rise of temperature during the later stages of the chemical reactions. More water was used with the delayed cubes, and this was found to contribute in keeping down the temperatures. The cube first in the mould had attained its maximum temperature, 81.5 degrees C., at the time the 8-hour batch reached its mould.

On diagram No. 3 is shown the behavior of "Alpha" cement when gauged with hot and with cold water. Prompt and energetic action characterizes the behavior of both Portlands and

No. 3. 12 inch cubes.

Temperatures acquired by cements while setting.



Natural cements when gauged with hot water. Its accelerating influence is shown by the maximum temperatures being sooner reached and higher limits attained than by the use of cold water. The lower curves of mortars are shown on this diagram. The curves of 1:2 and 1:3 mortars would, if plotted, occupy places between those of the 1:1 and 1:4 mixtures.

The Silica cement of this diagram was made of 40 per cent. "Lehigh Portland" and 60 per cent. crushed limestone. Its behavior, which was similar to a mortar, and the relation of its curve to that of the neat "Lehigh" is here indicated.

A rise in temperature of a few degrees only, much less than that displayed by these examples, is traditionally attributed to the presence of free lime, and by some looked upon with disfavor.

To this it may be remarked that the strongest cements as a class have in these tests been found possessed of the greaetst heating capacity, not infrequently exceeding the temperature of boiling water.

Attention is directed to the fact that some cubes did not attains their maximum temperature until a period was reached later than the so-called time of final set under the needle-indentation and penetration methods. It would obviously be regarded as inexpedient to assume that final set had really taken place while the chemical reactions, as indicated by the rise of temperature, were still in progress and prior to the time of its most active state.

In reviewing the indications of the specific-gravity determinations of the ground material, the evidence of the temperature curves and the influence of more or less water used in gauging, with the results of the current methods of judging of the time of setting, it would seem that the weight of evidence was against attaching great importance to the indications of the latter tests.

J. E. Howard.

WATERPROOFING CONCRETE STRUCTURES.*

EVER since concrete has entered so largely into the field of construction as a substitute for stone masonry, there has been more or less discussion as to its permeability, and various expedients have been resorted to to prevent the seepage of water through the material. This refers more particularly to the large masses of concrete built for engineering structures. I am aware that there has been more or less success in making concrete impervious to the action of water by various means, but do not think that any of them have given such satisfaction as to become generally used.

*A paper presented to the American Cement Users' Association by W. H. Finley, C.E.

It is a question whether the addition of alum, soap and other extraneous material does not affect the lasting qualities of the concrete. If the announcement of the Star-Stettin Portland Cement Works that they are now manufacturing, according to a process invented in Germany, a waterproof cement which will become impervious to water, will resist the action of frost, heat, hot water, sea water and diluted acids, is borne out, the question of waterproofing concrete is settled for all time. However, concrete, as usually built in many engineering structures, is not impermeable to the action of water, and some method of waterproofing the same, I think, is vitally necessary. That this is appreciated by engineers is clearly evidenced by the amount of waterproofing that is now being done on concrete arches, abutments, retaining walls, etc. I have recommended for years the necessity of waterprofing both stone masonry and concrete structures where there was any danger of seepage of water, and believe that such a precaution will extend the life of the structure.

A recent examination of concrete abutments, retaining-walls, etc., built in Chicago some years ago, disclosed the fact that water was seeping through the mass in several places, particularly along the parting planes where the work was not carried on continuously. This condition is frequently observed in concrete construction, and I think could be entirely prevented if the back of the structure was thoroughly waterproofed with asphalte.

Some years ago I had occasion to repair some masonry arches built in 1862 that were rapidly disintegrating owing to the infiltration of water. These arches were uncovered, the damaged stone replaced, and the extrados of the arch was plastered with cement concrete and then thoroughly waterproofed with asphalte. Time has demonstrated that this work was very successful. I have since uncovered a number of arches that were leaking, and found that the concrete backing did not prevent the entrance of water. These were cleaned off and waterproofed with asphalte in each case. It is now the practice on a number of railroads to thoroughly waterproof all arches, abutments, retaining-walls, etc. The method generally employed is to use as a first coat asphalte cut with naphtha, to be applied as a paint to the concrete after the same is perfectly dry, and then cover the surface with an asphaltic mastic composed of one part of asphalte to four of sand; this to be smoothed off with hot smoothing irons and thoroughly tamped and pressed into place. If the filling over the arch is ordinary gravel or dirt no other work will be necessary, but if it is filled with broken stone or stone chips it is better to cover the surface of the asphalte with washed roofing gravel so that the broken stone will not cut or damage the asphalte surface.

There are various other methods employed in waterproofing concrete surfaces with asphalte, such as the use of burlap or other fabric embedded in the asphalte coating. It is very difficult to make hot asphalte adhere to a concrete surface, however dry the same may be, unless it is heated by artificial means. Hot asphalte laid on ordinary dry concrete will not adhere, and can be rolled up like a blanket after it has cooled. I have had some success in applying hot asphalte direct to concrete surfaces after the same had been dried and heated with hot sand, but much prefer the use of the asphalte cut with naphtha applied as painting or swabing coat. The cost of this work with present prices of first-class asphalte will range from 10 to 20 cents per square foot, depending upon local conditions. It does not require any special expert knowledge for its application. After a brief coaching the forces as usually employed can produce a satisfactory job.

It might be well at this time to say something about the quality of the asphalte to be used for waterproofing purposes. In the past few years there has been a large development of asphalte for this purpose, and it is now possible to get, at a reasonable price, a pure asphalte that will not flow under a temperature of 212 degrees and not become brittle, when spread thin on glass, at 15 degrees below zero. Also it will resist the action of acids and alkalies.

The following specification is one that I have used with good results in waterproofing works:

"Asphalte shall be used which is of the best grade, free from coal tar or any of its products, and which will not volatilize more than one-half of 1 per cent. under a temperature of 300 degrees Fahr. for ten hours. It must not be affected by a 20 per cent. solution of ammonia, a 35 per cent. solution of hydrochloric acid, a 25 per cent. solution of sulphuric acid, nor by a saturated solution of sodium chloride.

"For metallic structures exposed to the direct rays of the sun the asphalte should not flow under 212 degrees Fahr., and should not become brittle at 15 degrees Fahr. when spread thin on glass. For structures underground, such as masonry arches, abutments, retaining-walls, foundation walls of buildings, subways, etc., a flow point of 185 degrees Fahr. and a brittle point of 0 degree Fahr. will be required. The asphalte covering must not perceptibly indent when at a temperature of 130 degrees Fahr. under a load at the rate of 15 pounds per square inch, and it must remain ductile at a temperature of 15 degrees Fahr. on metal structures and at 0 degree Fahr. on masonry structures underground.

"Before applying asphalte to a metal surface it is imperative that the metal be cleaned of all rust, loose scale and dirt, and if previously coated with oil this must be burned off with benzine or by other suitable means. The metal surface must be warm, to cause the asphalte to stick to it, and the warming is best accomplished by covering it with heated sand, which should be swept back as the hot asphalte is applied. When waterproofing masonry structures, if the surface cannot be made dry and warm it should be first coated with an asphalte paint made of asphalte reduced with naphtha. This is particularly necessary for vertical surfaces.

"The asphalte should be heated in a suitable kettle to a temperature not exceeding 450 degrees Fahr. If this is exceeded it may result in 'pitching' the asphalte. Before the 'pitching' point is reached the vapor from the kettle is of a bluish tinge, which changes to a yellowish tinge after the danger point is passed. If this occurs, the material should be tempered by the addition of fresh asphalte. The asphalte has been cooked sufficiently when a piece of wood can be put in and withdrawn without the asphalte clinging to it.

"The first coat should consist of a thin layer poured from buckets on the prepared surface and thoroughly mopped over. The second coat should consist of a mixture of clean sand or screenings, free from earthy admixtures, previously heated and dried, and asphalte, in the proportion of 1 of asphalte to 3 or 4 of sand or screenings by volume; this is to be thoroughly mixed in the kettle and then spread out on the surface with warm smoothing irons, such as are used in laying asphalte streets. The finishing coat should consist of pure hot asphalte spread thinly and evenly over the entire surface, and then sprinkled with washed roofing gravel, torpedo sand or stone screenings, to harden the top. The thickness of the coating will depend on the character of the work and may vary from ¾ to 2 inches in thickness.

"Where a quantity of asphaltic concrete is required, such as in trough floors on bridges, a concrete should be made in the proportion of one part asphalte, two parts sand and three parts limestone screenings, thoroughly mixed and rammed into place with tamping irons on the first coat of pure asphalte with which the metal was originally covered. At all drainage holes large-sized stone should be carefully placed to insure perfect drainage."

It may not be out of place in discussing the question of waterproofing to call attention to the necessity for provisions for drainage in all concrete and masonry structures. This has not been given as much attention as it should receive. Whether waterproofing material is applied or not, the question of thoroughly draining the structure is of the greatest importance.

In ordinary building construction sufficient attention has not been given by architects and builders to the proper waterproofing of their foundation walls. I have observed recently in this vicinity a number of buildings in process of construction where the excavations for the cellar and lower foundations were made in a clayey material and concrete foundation walls put in without making any attempt to apply a waterproofing or damp-proof coating to the wall, or to provide suitable drainage to carry off the ground water.

In this particular we are falling away behind even the early Roman architects and builders. In all the examples of their work it is evident they gave the greatest consideration in their construction to proper methods for keeping their foundation walls dry, and we cannot do better to-day in such matters than follow the advice of the great architect Vitruvius, who, writing about twenty-five years B. C., described methods of waterproofing and ventilating foundation walls that compare favorably with the best methods used to-day, excepting that we may have better materials for waterproofing than were known at that time.

Asphalte, I believe, makes the best damp-proof or waterproofing material that can be used in foundation walls and for all structures where such provision is necessary. It has been used from the earliest times for the purpose of protecting material from air and water, and we have examples of it in our museums where the mummy cases were sealed with this material more than 3,000 years ago.

BOOKS AND PAPERS

WE closed this really interesting and instructive picture-book* with the ejaculation: "What a chronicle of the 'ready-made!'" Of all the forty-odd "palaces," "châteaux," "mansions"—they are actually so called—there is not more than one or two that suggests growth. They, the great majority, suggest nothing so much as that they have been seen in a shop window by some one with a long purse and incontinently bought, finished, furnished, decorated—complete inside and out; nothing left to be done later, no chance for reconsideration or change of mind, no opportunity for blending in one's own whimsies and no possibility left for one's peculiar idiosyncracies to express themselves.

These buildings unquestionably do have character and individuality, but it is the architect's individuality that is expressed, not the owner's; and when it comes to a man's home, it seems but right that it should bear the stamp of his individuality and not that of some other fellow, as different from himself as day is from night. And yet it is not strictly fair to say that these houses express the individuality of their designers, so many of them are French châteaux, Italian villas, Roman palaces, which might, so far as individuality goes, have been designed by men dead centuries ago, or by any one of five hundred of their modern successors who chanced to have a fairly good collection of books and photographs.

We cannot quite blame the American architects who have produced these exotic structures for their clients, for it must have been "great fun" to build them; but what have the owners been thinking about that they should allow their architects to do such things with their money? The ordinary man who builds, likes to have his house fit his own idiosyncracies, to express his own ideas of comfort, if not of beauty, and enjoys nothing more than, at a later day, "throwing out a bay window," or "running out an L" at the very point and in the very direction use and experience have taught him would produce the most comfortable and cheerful results. But these elaborate homes of the rich are finished—complete works of art that the artist forbids them to meddle with: they are the very apotheosis of the ready-made.

Were it our fortune to be a plutocrat, so that it was necessary to build a "show place" to use up portions of unneeded income and so had to employ a fashionable architect, we would be likely to say: "Well, if this sort of thing is the latest mode—if I've got to have a great colonnade in front and a pergola behind, if I can't have any blinds, if I must have a staircase wide enough for a regiment, and mosaic floors that give me goose-flesh every time I touch them, then, go ahead. But, mind, the third story is to be left unfinished. After you and your men have gone, I'll get a few carpenters and finish that off to suit my own comfort and I'll live there!"

But all this does not explain what sort of a book it is that has so stirred our non-plutocratic spleen. Briefly, the book is as much intended for show as are the places it illustrates. It is a direct imitation—a long distance behind—of that wholly admirable and truly artistic book, "*Gardens Old and New*," published three or four years ago in England. But while that was a wonderful piece of bookmaking in every one of the many departments of the art, and while its illustrations were full of poetry and natural and artificial interest enhanced by historic and legendary association, this American imitation constantly irritates one because photographer, plate-maker and printer have failed to do justice to one another's work, while the subjects illustrated possess neither legendary nor historic interest and smack mainly of the dollar. In the entire series of plates, only those which illustrate some interiors in Mrs. Hearst's "Hacienda" have the charm of personal individuality about them.

The architects whose buildings are here shown have done their work well, and most of the buildings in their exterior treatment are creditable pieces of design and, because of their scale and elaboration, satisfactorily account, under the item construction, for a proper share of the obviously large total cost in each case. But in the greater number of cases the buildings are pure exotics. Mr. Hunt's over-elaborated French château "Biltmore" is no more in place amid American setting than is Mr. Haydel's castellated "Grey Craig," or Messrs. Carrère & Hastings's "Bellefontaine," or half a dozen more that prove how convenient it is for the modern American architect to have a good working library. It really does not seem as if Americans, however rich they actually may be, can ever really feel at home in buildings that have so little connection with the soil and the customs of the fathers.

On the other hand, it is equally impossible that they should not feel at home—and behave as they feel—in such home-like Colonial houses as "The Orchard," Mr. J. L. Breese's home at Southampton, N. Y., by Messrs. McKim, Mead & White, and "Ashford," the home of Mr. Frank Squier at Greenwich, Conn., by Mr. Wilson Eyre. Even the houses of obvious English derivation, such as "Craigston," the home of T. C. Hollander at Wenham, Mass., by Mr. W. G. Rantoul; "Talbot House," the home of Mr. Talbot J. Taylor at Cedarhurst, N. Y., by Mr. C. A. Rich, and the home of Mr. J. G. Wright at Brookline, Mass., by Messrs. Chapman & Frazer, look more as the home of an American man of wealth should look than these other translations from French and Italian surroundings.

But it is not the exteriors and their architectural treatment that distress us, it is the shoppy and theatrical interiors, almost all of them purely factitious, and the great majority simply tawdry. Does the ordinary American man—for in spite of their money these owners are but ordinary American men, like the rest of us—feel that his "tweeds" or even his black "dress suit" or his "Tuxedo" is really in keeping with tapestries, girandoles, consoles, tabourets, mirrors and all the other furnishings originally designed for association with the show-clothes, feathers, silks and jewels of the court of the roi soleil? or is his American commonplaceness any more in keeping with marble seats, which may have been gratefully warm to the toga-clad Roman, the folds of whose draperies harmonized with the statues about him, but which offer but cold comfort in this climate? The blundering is more obvious in the interior than in the exterior treatment, and the probable explanation is that the interiors were turned over to the upholsterer and decorator to work their will upon, with but little restraining oversight from the architect and none at all from the overawed owner, compelled to play the rôle of Mr. Boffin amid magnificence he did not understand and vaguely yearning for his own familiar dust-heap.

Architecturally, this book is interesting and instructive, but it is still more so as a key to American manners and customs, which exhibit the natives of this country as a species of hermit-crab, ready to make a home of any shell cast off by a remote and alien generation.

IN writing of the death of the late Professor Kerr, we chanced to speak of a novel he wrote in his youth, and that led us to enumerate the few novels we happened to recall which had architects for their heroes, and, amongst these, mentioned "*The Common Lot*," then publishing in the *Atlantic Monthly*. This story is now issued in book form, and the publishers have kindly sent us a copy,* thinking that because its hero is an architect we would be glad to make such mention of the book as would stimulate its sale amongst the hero's fellow-professionals. Frankly, we wish we had not had the book sent in, for we can only speak of it as one of the most repulsive stories we have ever read. We presume that Mr. Herrick must have felt he had a "purpose" in writing the book, but we are at a loss to discover where such purpose is revealed. Nor can we guess what the author means by his title. Is it the "common lot" for an architect to be dastardly weak and little scrupulous where his income comes from? We hope not, we believe not. Is it the "common lot" for architects to put themselves in the power of speculating builders and allow their buildings to be "skinned" while the owner is paying for full compliance with reasonably perfect specifications? Again, we believe not. Is it the "common lot" for architects to have true-hearted wives who believe in them as geniuses long past the time when other people have found them to be whited sepulchres as to both artistic ability and business morality? We hope it may be. Mr. Herrick may have begun life in an architect's office, so far as we know; if not, he has posted himself very thoroughly as to what is known to go on sometimes—but only sometimes—in the building world, and so his story has an air of verisimilitude, which one, who respects both his profession and the great majority of those who practise it, cannot but feel is very unfortunate and really somewhat libellous.

The story, in brief, tells how a young architect, a facile and

*"*American Estates and Gardens*." By Barr Ferree, Editor of the *Scientific American Building Monthly*, Corresponding Member of the American Institute of Architects, and of the Royal Institute of British Architects. New York: Munn & Co. 1904. Price, $10.

*"THE COMMON LOT." By Robert Herrick, author of "*The Web of Life*," "*The Real World*," etc. New York: The Macmillan Company. 1904.

"brilliant" designer, is possessed with the get-rich-quick mania, comes under the influence of a speculating builder and allows him to skin his buildings, sharing in the plunder and living the life of a member of the local swelldom. One of their buildings, an apartment-house, advertised as "thoroughly fireproof," burns and causes the loss of several lives. Conscience stricken, the architect recovers his moral balance and decides to stand trial like a man, in place of escaping out of the country. Through the influence of his lawyer, a one-time lover of his wife, the defendant is cleared of the criminal charge and begins life over on a simpler scheme.

Mr. Herrick uncovers an ulcer, and if it is artistic or good work to paint an ulcer, then he is to be applauded, for no one can mistake it for anything beneficent; it is unmistakably malignant, unpleasant and as little well worth while painting as anything that can be named. We do not believe in making the delights of heaven attractive solely by portraying the discomforts and repulsiveness of hell.

ARCHITECTS' REGISTRATION IN EUROPE AND THE UNITED STATES.

THE following particulars concerning the position of architects in European countries and the United States, which have been collected for the purposes of the Institute Committee now sitting on the question of Registration, are published in the current issue of the *Journal* of the Royal Institute of British Architects.

GERMANY.—The profession is free. Architects who have studied in the State High Schools can enter for the examination known as the Government Architect (Staat Baumeister) examination. This title is obligatory for architects of public works. It is now almost always required for city architects. Ordinary practising architects desiring to hold an official position pass this examination. The three technical high schools of Berlin, Hanover, and Aix-la-Chapelle grant this diploma after a course of four years. The other technical schools do not grant a diploma, but a certificate on leaving school.

AUSTRIA.—The profession is free, as the architect is regarded as an artist. There are Government diplomas, but they are little sought after by artists, as they only have a scientific value.

HUNGARY.—The profession is free; but the architect who would hold an official position must be provided with a diploma granted by the Polytechnic School of Buda-Pesth, after a four years' course. The Courts only recognize as official experts or "directors of buildings" holders of this diploma.

HOLLAND.—The profession is free. The State Polytechnic School of Delft grants a diploma of architect-engineer after a four years' course. This is in no way obligatory.

BELGIUM.—The profession is free. No diploma at all.

SWITZERLAND.—The profession is free. No diploma at all.

ITALY.—Compulsory diploma. Granted by the Government on the recommendation of the Examination Commission of the Government "School of Application." The scientific side is dominant. The same diploma is given to the architect as to the engineer.

SPAIN.—Compulsory diploma. Architect must pass examinations after his studies, and be provided with the diploma granted by the only two schools that exist in Spain: the Superior School of Architecture, Madrid, and the School of Architecture, Barcelona. Diploma conferred through Minister of Public Instruction.

PORTUGAL.—The profession is free. Diplomas granted by the State Schools of Lisbon and Oporto, but not obligatory in any way.

SWEDEN AND NORWAY.—The profession is free. No diploma at all.

RUSSIA.—Compulsory diploma or certificate. Diploma granted by the Imperial Academy of Fine Arts, the Moscow School of Architecture, and the State Polytechnic Schools. Certificates granted to bona-fide practitioners and assistants after passing an examination held by the Technical Committee of the Minister of the Interior. This does not give the title of architect, but the right only to practise.

GREECE.—The profession is free. The Government gives no diploma; but the diploma given by the School of Art of Athens is sought for only by those who wish to occupy an official position.

TURKEY.—The profession is free.

UNITED STATES OF AMERICA.—The profession is free—except in the State of Illinois, where architects must have a license. This license is given by examination by the State Jury, or from the diploma of the University of Illinois.

FRANCE.—The profession is free. The Government gives diplomas to the nominees of the Ecole des Beaux Arts, and the title "Architecte diplômé par le Gouvernement"; but these diplomas give no privileges or rights whatever. And so no official need possess this diploma, or any other certificate granted by an examining body.

COMPARATIVE TABLE.

Profession is absolutely free in:	Profession is free, but Government officials require diploma in:	Diploma is required in:
Austria.		Italy.
Holland.	Germany.	Spain.
Belgium.	Hugary.	Russia.
Switzerland.	Greece.	Illinois, New Jersey, California (U. S. A.).
Great Britain.		
Sweden and Norway.		
United States (save in three States).		
France.		
Turkey.		
Portugal.		

APHRODITE SPEAKS.

[For the sake of future generations, it must be explained that the fair soliloquist is supposed to be the statue now on exhibition in New York, assumed by some to have been carved by Praxitiles and by others to be simply a modern forgery.—EDS.]

STILL they come, these gaping mortals;
How they throng my temple's portals,
Strangely clad, to bow before me.
"Rosy maidens, youths, adore me!
I am she that Love makes mighty!
I am sea-born Aphrodite!
Cyprus, Cnidus, Thebes obey me;
Corinth crowns me. Haste to pay me
Homage due!" * * *
What? Ne'er a flower?
Have I lost mine ancient power?
Where are all my sacrifices?
Weighty Doubts and sage Surmises,
These they bring—a cold oblation!
Is this modern adoration?
Here's no thought of vows or praying.
Hark! what's that his lips are saying?
Sooth! He thinks my past is shady.
What a way to treat a lady!
Well! of all the stupid creatures!
This one doubts who carved my features!
That one turns;—I'm quite indecent!
This one says my sculpture's recent—
I'm a fraud; and that barbarian
Says my marble isn't Parian.
This declares me true Pentelic;
That avows me quite a relic.
(Thank you!) Hush your learned patter;
Cease your doubts! What does it matter?
View me. Think me what you please.
Think that great Praxiteles
Carved me. Think the tale a myth;
Call my sculptor "Jones" or "Smith."
Count my years by thousands. Say
I was fashioned yesterday.
Tell me then, all else forgot,
Am I beautiful, or not?
Art is ageless. Athens knew
Naught in Art but False or True.
Changed is now the race of Earth,
Sordid grown; to measure worth
Simple rules no more suffice.
Greece loved Beauty; ye love Price.

Arthur Guiterman, in N. Y. Times.

ILLUSTRATIONS

MADISON AVENUE PRESBYTERIAN CHURCH, NEW YORK, N. Y. MESSRS. MCKIM, MEAD & WHITE, ARCHITECTS, NEW YORK, N. Y.
FRONT ELEVATION OF THE SAME.

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Additional Illustrations in the International Edition.

CHANCEL SCREEN IN THE MEMORIAL CHAPEL OF THE GOOD SHEPHERD: GENERAL THEOLOGICAL SEMINARY, CHELSEA SQUARE, NEW YORK CITY. MR. CHARLES C. HAIGHT, ARCHITECT, NEW YORK, N. Y.

NOTES AND CLIPPINGS.

A SIPHON PROBLEM SOLVED.—A system for continuously siphoning an Ontario quarry, instead of depending wholly upon the dam and spillway, was desired. The first attempt was made with a galvanized sheet-steel siphon about eight inches in diameter. There was an eight-foot lift, followed by a practically horizontal run of 200 feet over level land, and that was followed by an 18-foot fall. The pipe was carefully made and tested for air-tightness, and was installed in position. The lower end of the pipe was sealed, and the pipe itself was filled from a cock at the top. As soon as the lower gate was released and the current started, the entire pipe collapsed, as a result of atmospheric pressure, the pipe not having sufficient strength to maintain the vacuum necessary to lift the desired volume of water. The next experiment was made with a siphon of two-inch iron pipe, following the same course as the former siphon. It operated satisfactorily during the first day, but on the next morning it was found to be stopped. The process of stopping and filling was again resorted to, and the siphon acted satisfactorily during the day, but on the following morning the same conditions as on the day before were encountered. The conclusion was then come to that there had been an accumulation of air in the pipe as a result of the gradual separation of the air which was in the water, and subsequent experiments proved the truth of this hypothesis. The problem was solved by attaching a reducing elbow at the top of the 18-foot section, reducing the diameter of the pipe from that point to its lower end to one and a quarter inches. This reduction of the diameter of the pipe accelerated the flow of water to such an extent that the air which had accumulated at the elbow and at the top of the 18-foot section in the original installation could no longer accumulate. No further trouble was experienced. —*Fire and Water Engineering.*

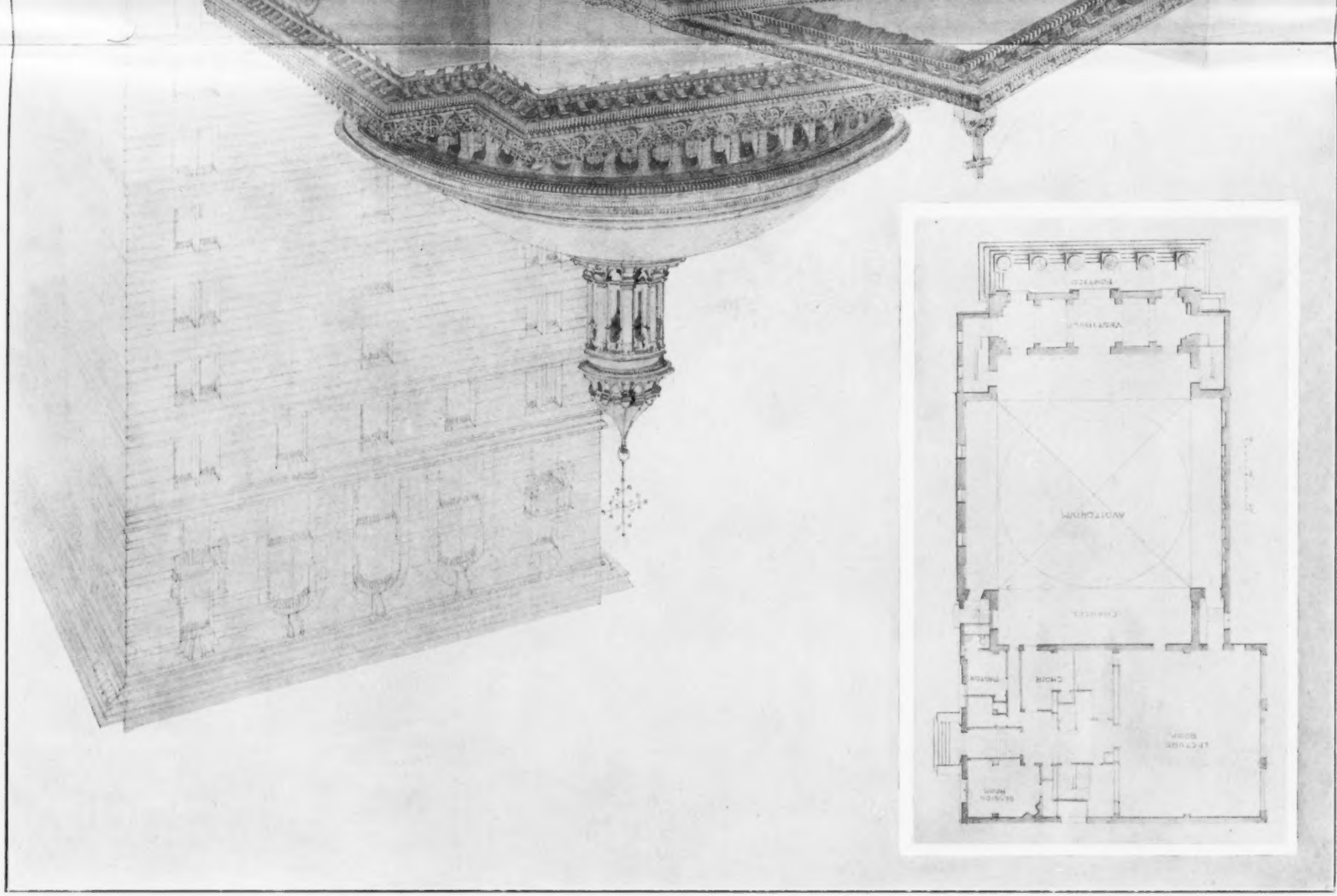
REGULATIONS FOR STANDPIPES.—The following regulations for standpipe fire-line work on buildings in New York have been adopted: Standpipes will be required in all buildings exceeding 100 feet in height, erected prior to Dec. 25, 1899, and in all buildings exceeding 85 feet in height erected since that date. Such buildings as come within above classification, and which do not exceed 150 feet in height, in which standpipes (fire-lines) now installed are less than three inches in diameter, must be provided with lines four inches in diameter, and in such buildings as exceed 150 feet in height the fire-line must be six inches in diameter unless the lines already installed are considered satisfactory and approved by the Fire Department. These standpipes must be of wrought iron or steel of sufficient strength to withstand the necessary pressure—in no case less than 300 pounds to the square inch—to force adequate streams of water to any of the floors of the building, or to the roof, and must extend from cellar to roof and be connected with outside two-way, three-inch, standard fire-department connections, with clapper valves and proper caps, placed on street front of buildings, above curb level, in a position accessible for use of the Fire Department and arranged so that the clapper-valves hang properly. These standpipes must be provided with proper valves (gate-valves preferred) and two and a half-inch outlets of the regular fire-department pattern and thread on each floor level, with sufficient standard two and a half-inch hose and nozzles arranged thereto to cover properly the entire floor area, arranged on proper and approved racks or reels, with improved open and controling nozzles. Proper check-valves shall be placed in top and bottom of such lines as are required to use tank or pump supply, or both. The hose outlets and hose must be located within stairway inclosures, except where it is impracticable to do so for reasons satisfactory to the Department. Where more than one standpipe is installed, cross-connections, preferably in the basement, of the same size as the main risers, must be provided. In all buildings over 150 feet in height and in such buildings as come within these regulations as to height and are occupied for living purposes, such as hotels, hospitals, asylums, etc., also in theatres, the standpipe line must have approved tank or pump supply, or both.

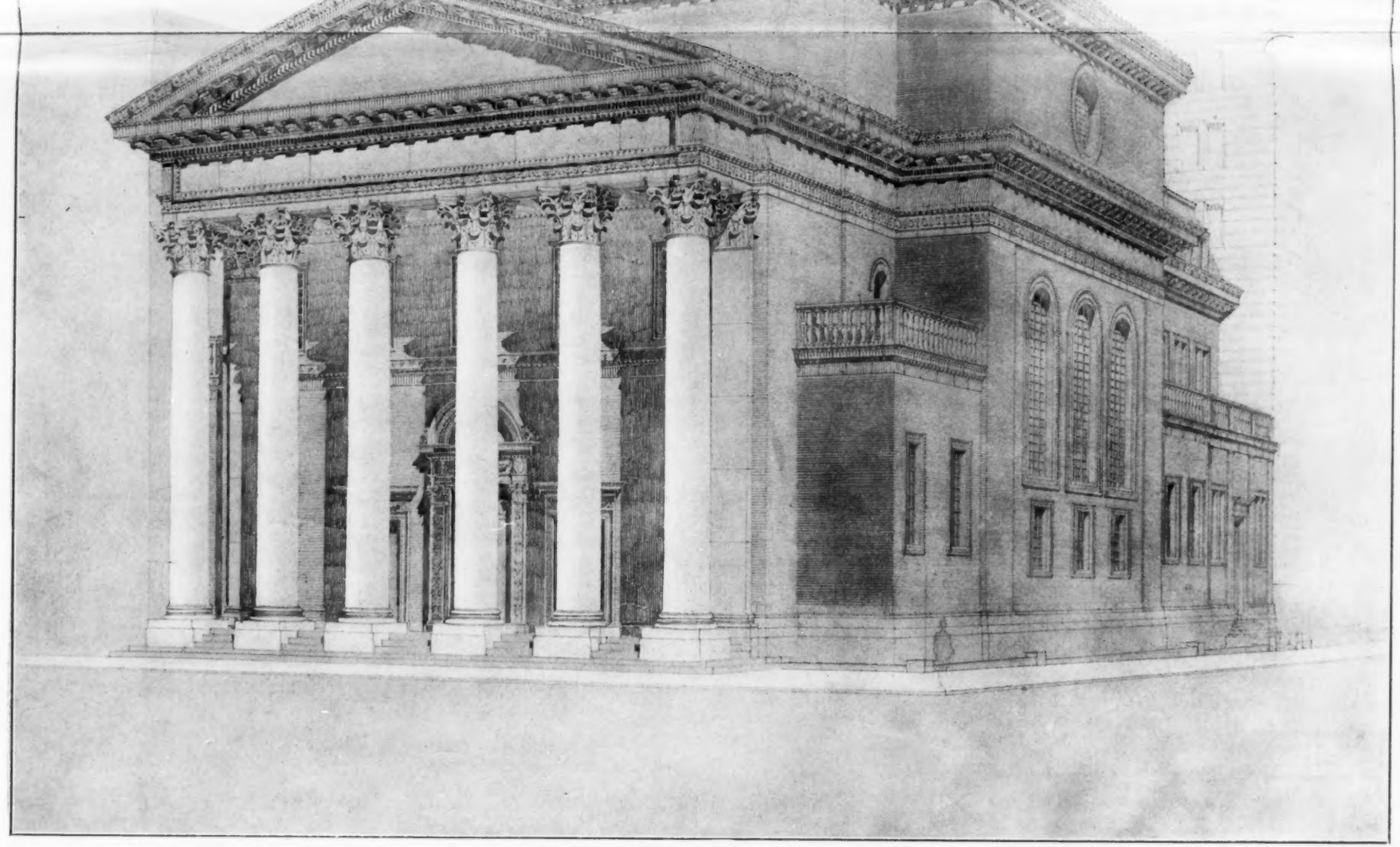
SUGAR AS A TIMBER PRESERVATIVE.—A novel method for increasing the usefulness of lumber has been perfected in England. The method consists, in brief, in replacing the air in wood with a solution of beet sugar and removing the excess of water by a subsequent drying. The inventor of the process, Mr. Powell, attains his object by useing a large boiler in which the timber to be treated is placed and the beet-sugar solution pumped in. After the air has all been replaced by the solution the wood is kiln-dried. Examination of the wood seems to show that the sugar is absorbed into the fibre of the woody tissue, and is not simply held in the intercellular spaces. It is claimed that timber treated in this way is no longer porous, will not shrink or warp, and is stronger, heavier and more durable. Moreover, it is said that this wood is not liable to dry-rot; it is hoped that by mixing the proper poisons with the sugar bath the wood will be made resistant to the attacks of fungi and insects.—*Collier's Weekly.*

CAST OF RODIN'S "PENSEUR" MALTREATED.—Considerable sensation was caused by the destruction of the plaster cast of Rodin's "Penseur," which had been placed in the Place du Panthéon in front of the majestic temple dedicated to the illustrious dead. The idea was to determine whether the statue would harmonize with the enormous building, the general opinion being that the statue would suffer from the crushing height of the Panthéon, and that the statue would detract from the pure architectural lines of the edifice, the superb dome of which is the finest in Paris. On a rainy afternoon last week a weird, dishevelled man sprang over the temporary railing that protected the Rodin statue, and, with a huge hammer, pounded it until it fell in pieces. When arrested he explained: "I am thirty-one years old, and was dying of hunger. For ten days I have lived by eating roots of cabbages that I picked up in the streets. Walking by the Panthéon, I saw this statue eating its own fist. Why should I have only cabbage roots to eat, while this 'penseur' should devour his succulent fists? I wrote to M. Pelletran, Minister of Marine, who assembled fifteen ghosts to decide the matter. While they were deliberating I destroyed the statue." Rodin called to see the crazy iconoclast who had thus destroyed the plaster cast of "Le Penseur," and is now having a new cast made to erect temporarily as an experiment before the Panthéon.—*C. I. B., in N. Y. Tribune.*

THE CAMPANILE, VENICE.—The committee entrusted with the superintendence of the work in connection with the re-erection of St. Mark's Campanile, says the correspondent of the *Glasgow Herald*, has published particulars of the progress made during the past year. The report states that during 1904, 3,076 trunks of larch trees, having an average diameter of 8 inches and length of from 12 to 13 feet, have been driven into the ground around the old foundations, which have been thus strengthened sufficiently to bear a load of 16,000 tons and support a pressure of 4.82 tons to the square foot. Larch trees have been used in preference to oak, as their trunks are straighter. The spaces between these piles have been filled up with cement and stones, the whole forming a solid and reliable base on which to raise the superstructure. This foundation has been further strengthened by placing above it a further row of piles laid lengthwise and covered with cement. Up to the present the total expenses connected with the work amount to 115,588 lire (or about $25,117), 79,914 lire having been spent during 1904 and 36,674 lire in the preceding year. Still greater precautions are to be taken to insure the stability of the new structure, and it is estimated that before the base is considered thoroughly reliable a sum approximating $40,000, will have been expended.

WHAT IS A WINDOW?—What is a window? This was the difficult problem which Justice Jelf and a common jury were called upon to decide in London, and such was the divergence of opinion that directly the jury had given its verdict the Judge reversed it. The puzzling point was raised by Mrs. Eliza Crumpler, wife of a potman, who claimed damages from her landlady for injuries received by the window of her room coming down on her head as she was looking for the postman. Although the Working Classes Act requires a landlord to see that windows work properly, it was argued for the defense that a window was no window when it, as in the present case, lacked sash lines. The jury found for Mrs. Crumpler, and awarded her £10 damages, but his lordship held that there was no legal evidence that the landlady was responsible, and entered judgment for Mrs. Quay, with costs.—*Exchange.*





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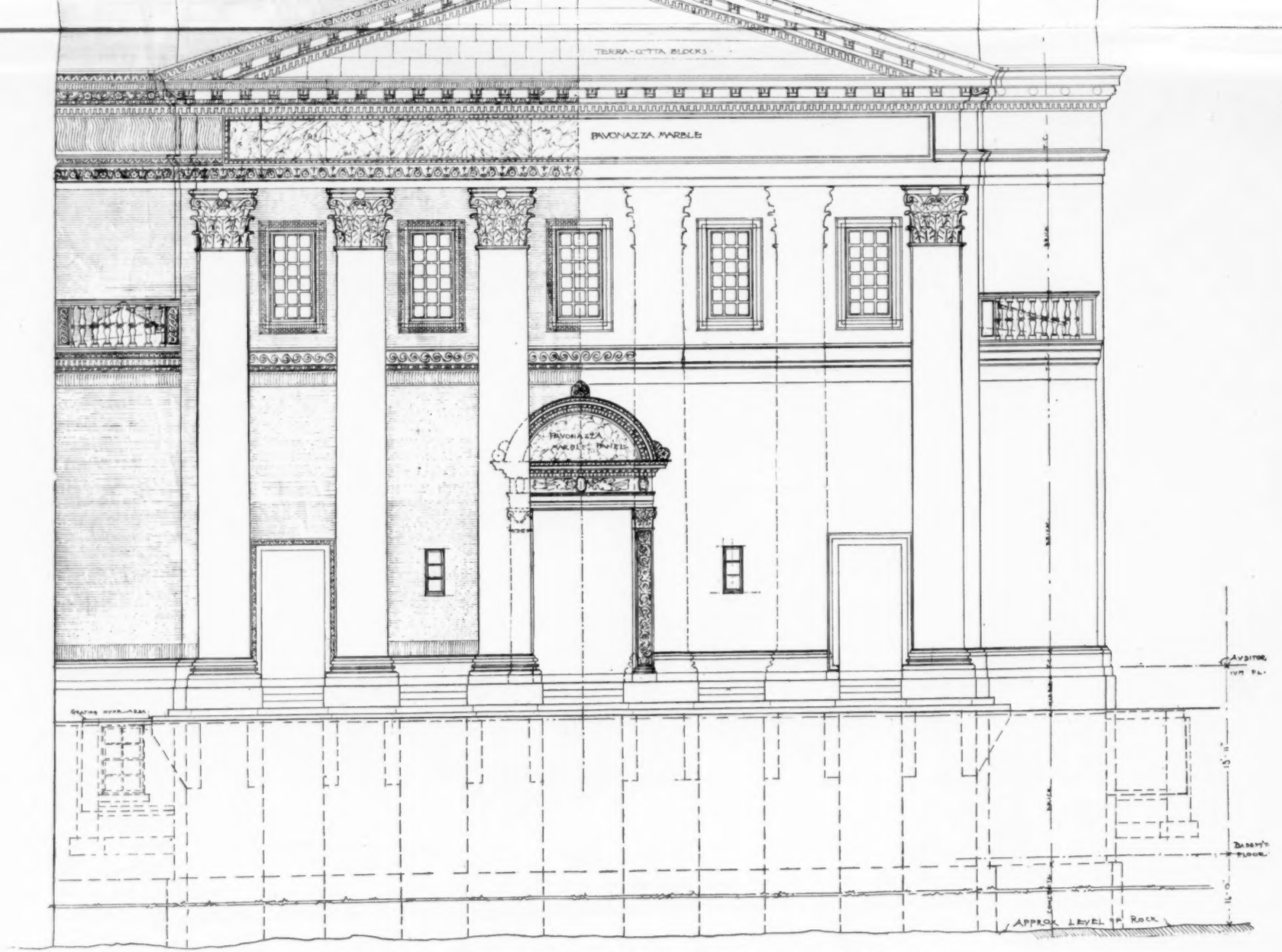

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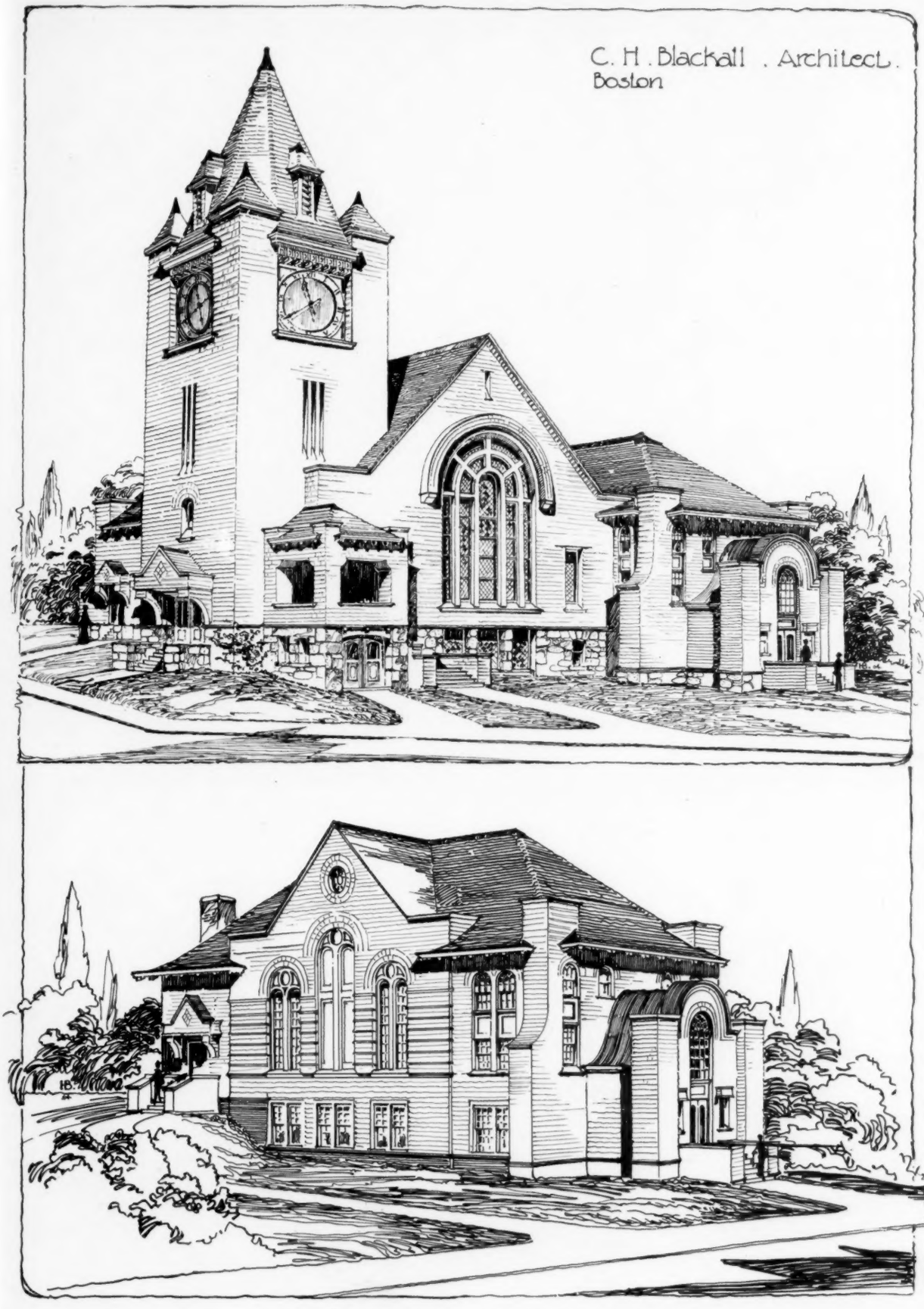

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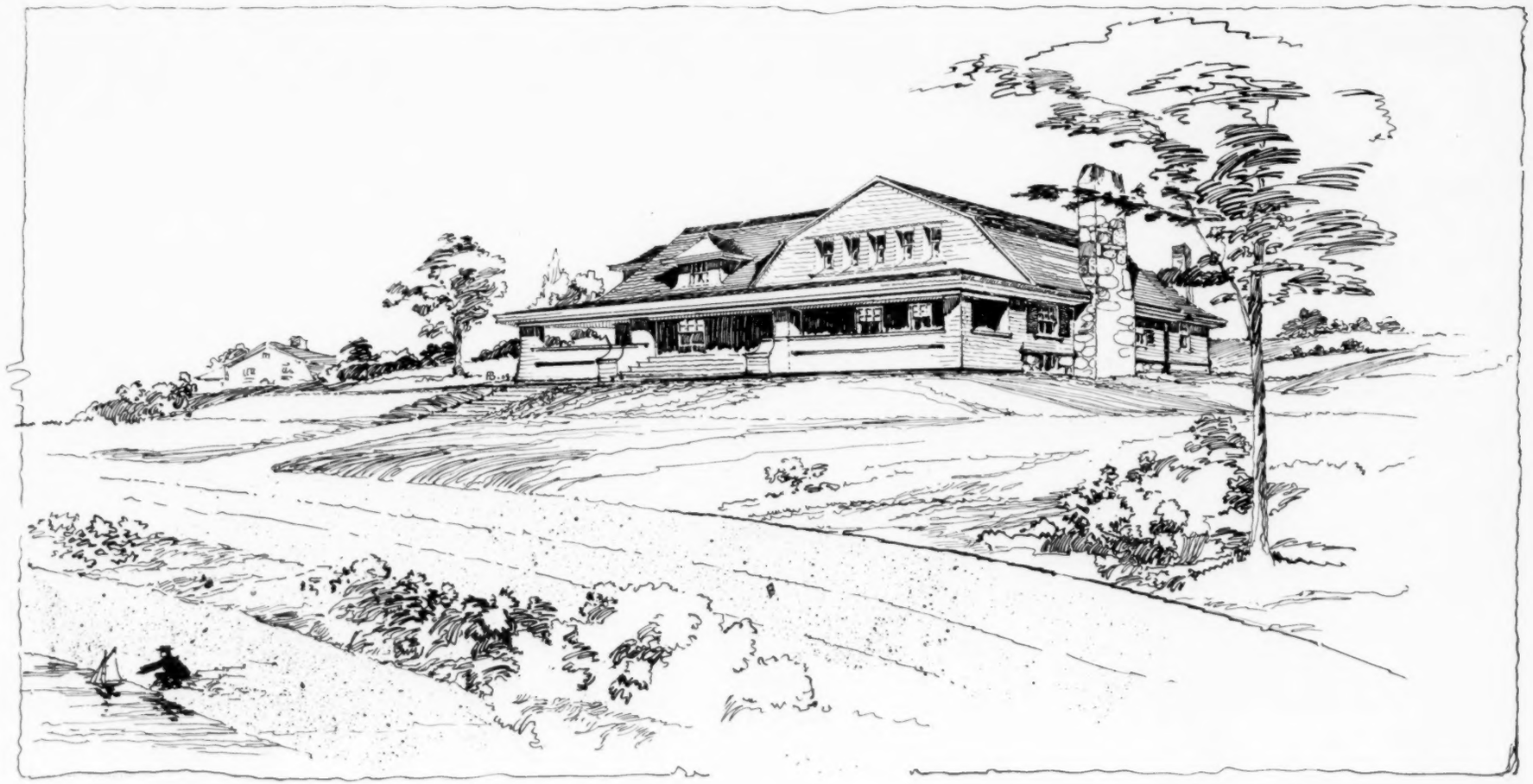

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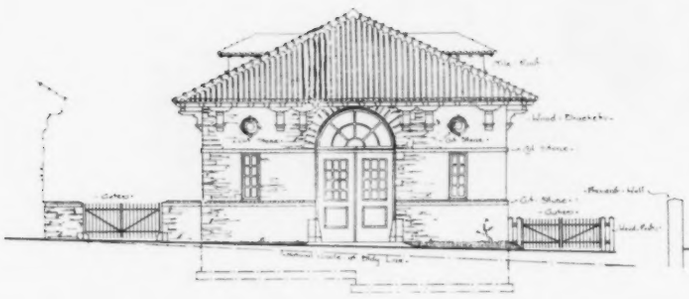

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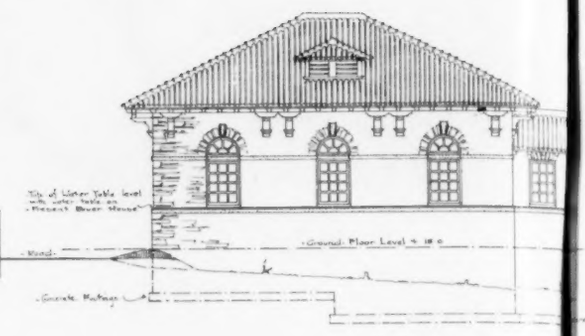

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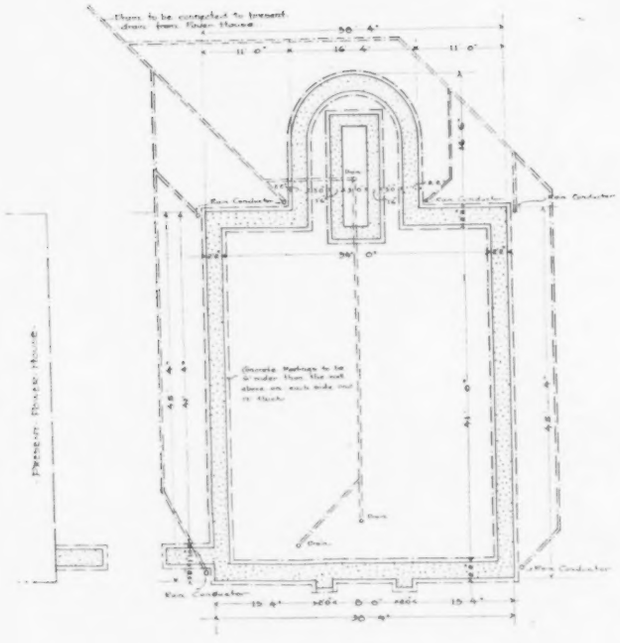

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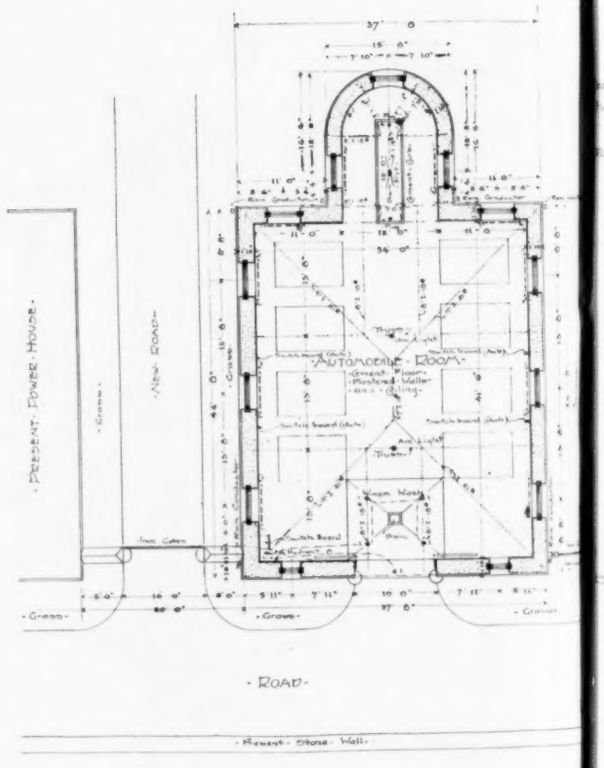

·GROUND·FLOOR·PLAN·

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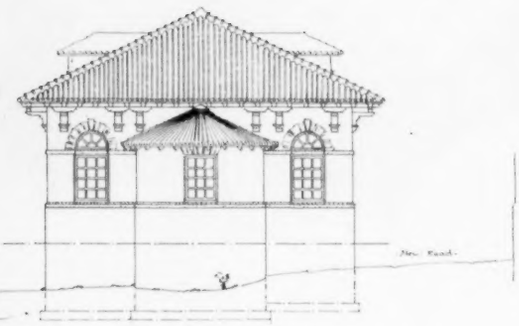

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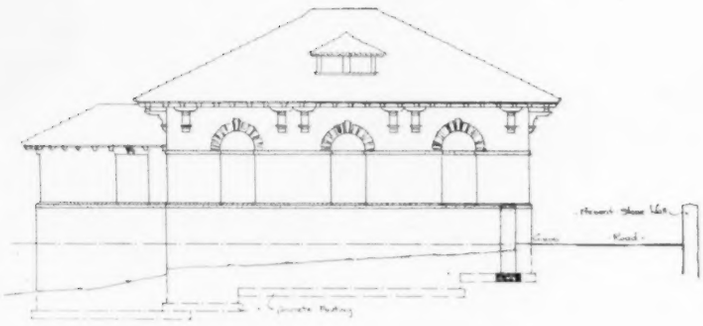
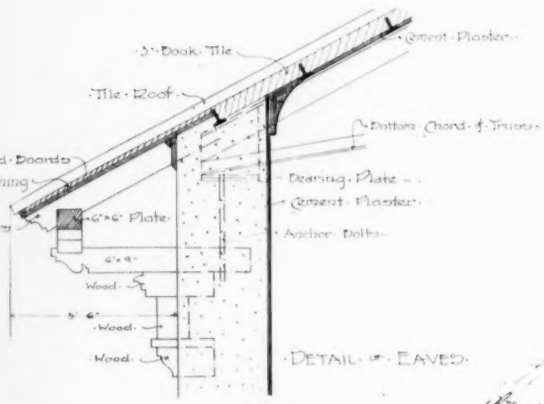


NORTH WEST ELEVATION



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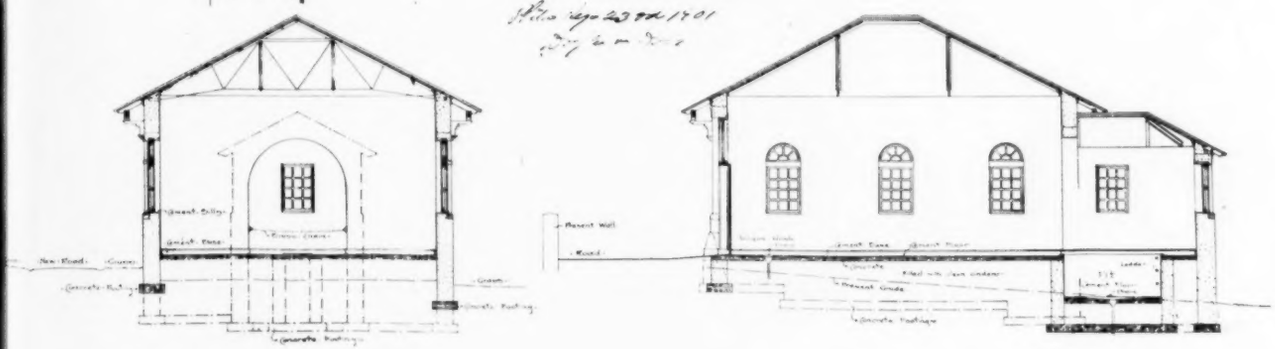

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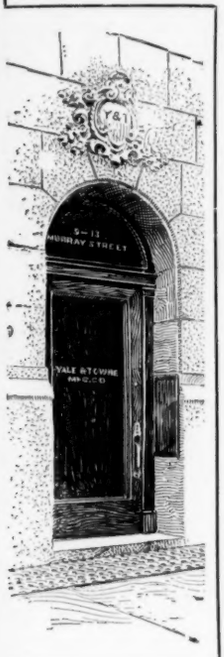

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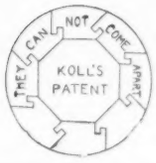

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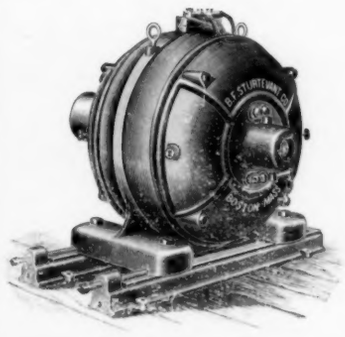

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PROPOSALS

Treasury Department, Office of the Supervising Architect, Washington, D.C., February 18th, 1905.—Sealed proposals will be received at this office until 3 o'clock P. M., on the 3d day of April, 1905, and then opened, for the enlargement (except elevator, heating apparatus, conduits, and wiring), of the U. S. Court House, Post Office, etc., at Macon, Georgia, in accordance with drawings and specifications, copies of which may be had at this office or at the office of the Postmaster at Macon, Georgia, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. (1522-1523)

Treasury Department, Office of the Supervising Architect, Washington, D. C., February 27, 1905.—Sealed proposals will be received at this office until 3 o'clock P. M., on the 6th day of April, 1905, and then opened, for the construction, including plumbing, heating apparatus, electric wiring and conduits of the U. S. Post Office at Marblehead, Massachusetts, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Postmaster at Marblehead, Mass., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. (1523-1524)

BUILDING NEWS.

Continued from Page ix.

struct a 5-story brick and iron building at an approximate cost of $60,000.

We learn through a press report that the buildings of Fahnley & McCrea, A. Keifer Drug Company, Griffith Brothers, E. C. Dolmetsch Co., Sherman House, Savoy Hotel, St. Charles Hotel and the Muir Millinery Company have been destroyed by fire at a loss of about $1,250,000, and that they will be rebuilt at once.

Iowa City, Ia.—The Iowa Brewing Company, of Iowa City, will erect a fine new modern brewery, to replace the property recently lost by fire. The new building will cost $70,000.

It is reported that the first section of the new engineering building of the University of Iowa, at Iowa City, will be erected the coming summer. The regents will expend the $50,000 appropriated by the Legislature and go as far with the construction work of the building as the money will permit. The building will be built of selected paving brick and trimmed with stone.

Jersey City, N. J.—Report states that School No. 6 will be rebuilt. James Wiseman, Clerk Board of Education. Also an extension to School No. 27 is under consideration. Cost, $125,000. John T. Rowland, 15 Exchange Pl., architect.

Jicarilla, N. M.—Bids will be received at the Indian Office, addressed to the Commissioner of Indian Affairs, Washington, D. C., until March 9, 1905, for furnishing and delivering necessary materials and labor required to construct and complete a hospital building at the Jicarilla School, N. M., in accordance with plans and specifications. For further information apply to H. H. Johnson, superintendent, Dulce, N. M.

Louisville, Ky.—Reports state that E. L. McClain, of Greenfield, O., has purchased site at 33d and Market Sts. on which to erect woodenware factory at a cost of $75,000.

Los Angeles, Cal.—Architect John C. Austin is preparing plans for a 7-story hotel to be erected on Hill and Court Sts. The owners are to be L. E. Porter and J. J. Seamans.

Plans are in preparation by J. C. Austin for a new detention hospital, to cost about $40,000.

The contract for the brick work has been let by John Parkinson for the new 12-story Billicke-Rowan Hotel, to be erected on 5th and Spring Sts.

The City Board of Education has admitted the report recommending the bond issue of about $780,000 for new school buildings and sites, to be erected in Los Angeles.

Laurel Bloomery, Tenn.—Geo. H. Robinson desires to correspond with architects relative to the construction of residences, store buildings, academy and Odd Fellows' hall.

Milwaukee, Wis.—It is stated that Charles McKenny, president of Milwaukee Normal School, will apply to Legislature for $175,000 appropriation for a new building.

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Franco-Canadian Co. will erect a 10-story building at St. James St. and St. Lambert Hill. Cost, $400,000.

Mobile, Ala.—It is stated that Frank A. Hervey and Charles B. Hervey will erect hotel at a cost of $550,000.

Minneapolis, Minn.—The Minnesota Chapter of the American Institute of Architects at its monthly meeting in St. Paul discussed the future interests of the State University, the general sentiment being that some comprehensive and far-reaching plan should be prepared which shall give dignity and a university atmosphere to that institution, impossible of attainment under the methods now in vogue in the planning of extensions and additions to the buildings on the campus.

New York, N. Y.—Plans have been made by Architects Schwartz & Gross, 35 W. 21st St., for two 6-story brick, stone and iron apartment houses, 65x87 feet, for the Concourse Realty Co., 1010 W. 34th St. They will be located on the south side of 137th St., 125 feet west of Broadway, and will cost about $250,000. They will have composition roofing, open plumbing, steam heat, hot water supply, electric light, etc.

The Metropolitan Citizens' Bank will erect an 8-story bank building to cost $400,000.

Plans have been drawn by Robert Maynicke, 298 Fifth Ave., for a 5-story brick store and office building, 60x115 feet, to be erected at 126-128 Fifth Ave., for The Fifth Ave. and Eighteenth St. Realty Co. It will cost $400,000. Henry Corn, 667 Madison Ave., president.

It is stated that the Contractors' Co-operative Co., 39 E. 42d St., will erect an apartment house on Broadway, between 123d and 124th Sts., to cost about $850,000. H. W. Howard, Jr., president.

Plans have been completed for the erection of a mausoleum, parochial residence, a chapel and a convent on the site of the graveyard of old St. Patrick's Church in Mulberry St., at a cost of $500,000. The frontal will be of Italian marble. Work will probably begin next spring.

A 6-story brick and stone apartment house will be built for the Willett Realty Co., 170 Broadway, at the southeast corner of West End Ave. and 82d St., from plans drawn by Architect C. Strong, 170 Broadway. It will measure 90x100 feet, and will have all improvements. Cost, $115,000.

It is stated that Harry T. Howell, Third Ave. and 148th St., has drawn plans for several apartment houses to be built in the Bronx. They will be 6-story buildings, measuring 50x98 feet, and are to be erected at the southwest corner of Elton Ave. and 156th St. for Jas. Harris; two 5-story buildings on the north side of 135th St., west of Willow Ave., for Martin Tulley; two 5-story buildings on the east side of Forest Ave., 225 feet north of 166th St., and one 6-story building at the southeast corner of Boston Road and 110th St., for the Begrisch & Schorn Realty Co. The cost of the buildings varies between $25,000 and $35,000.

It is reported that Hamburger & Kleinfeld have purchased the entire block on the east side of First Ave., between 68th and 69th Sts. The property will be improved by the erection of modern flat houses, plans for which are said to be in preparation.

Jacob Kotlowsky, 60 W. 117th St., will erect two apartment houses upon his property on the north side of 111th St., 200 feet west of Seventh Ave. They will be 6-story buildings, 50x88 feet, and will be constructed of brick and stone, with tin roofing. Cost will be about $120,000. Architect, G. F. Pelham, 503 Fifth Ave.

Rouse & Sloane, 11 E. 43d St., have drawn plans for three brick and stone flat houses to be built for Sussman & Halpin, 156 E. 107th St. They will be located on the south side of 143d St., 225 feet west of Lenox Ave. Plans call for 6-story buildings, 42x87 feet, to cost about $120,000.

A press report states that the property on the north side of 119th St., near Third Ave., owned by the Charles Realty & Construction Co., 103 Gold St., will be improved by the erection of a 5-story brick and stone flat house, 69x88 feet, plans for which have been prepared by Moore & Landseidel, Third Ave. and 148th St. It will have tin roof and all modern improvements. Approximate cost, $50,000.

Two apartment houses, 5 stories, 35x88 feet, will be built on the south side of 152d St., near Amsterdam Ave., for George F. Newmark and Harry Jackson, from plans by Architect John Hauser, 125th and Nicholas Sts. Cost, about $100,000. They will have front of light brick, with stone trimmings, tin roofing and open plumbing. Work to begin soon.

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Wethel, 363 Fifth Ave., at 2-4 E. 44th St. Hill & Stout, 1123 Broadway, are the architects, and the new building will be 5 stories high, 45x60 feet, and cost $100,000. It will be built of brick and stone and have the usual improvements.

We learn that the old buildings at 176 and 178 Broadway will soon be torn down and replaced by a modern 15-story business building. Douglas Robinson and Chas. S. Brown & Co., are representing the owner.

An appropriation of $3,000,000 has been made for the building of new schools and the purchase of school sites.

The Automobile Club of America has purchased land, and plans will immediately be drawn for the erection of its new home in W. 54th St., about 250 feet from Broadway. The whole cost will be $500,000. The new clubhouse and garage will have a frontage of 131 feet on W. 54th St., and a depth of 100 feet 5 inches. The land is at present occupied by private dwellings. The new building will be of the most modern fireproof construction, and is designed to be a model from every viewpoint. Ernest Flagg is the architect.

NEW ORLEANS, LA.—It is reported that about $250,000 will be expended in remodeling and improving the Hotel Royal. Address D. Mercier.

NEW BEDFORD, MASS.—Proposals will be received at the office of the Constructing Quartermaster, 209 Thames St., Newport, R. I., until March 10 for constructing 1 set frame quarters for field officer and 1 double set frame quarters for 2 non-commissioned officers at Fort Rodman, New Bedford, Mass. Information furnished upon application.

NEW HAVEN, CONN.—It is announced that under the auspices of the Yale class of '94 a committee has been appointed to promote a movement for raising funds for five new dormitories at Yale. The plan provides for one dormitory to be given by classes previous to 1865 and four dormitories by classes representing each of four successive decades.

NEWCASTLE, PA.—A contract has been awarded by the supervising architect of the Treasury for the construction of a Federal building at Newcastle, Pa., at a cost of $56,000, and the building is to be completed July 15, 1906.

NASHVILLE, TENN.—The trustees of Peabody Teachers' College have voted $1,000,000 for general improvements. It is proposed to erect buildings to cost about $250,000. John Bass, secretary; James D. Porter, chancellor.

OAKLAND, MD.—The jail and sheriff's residence, for which Holmboe & Lafferty, Clarksburg, W. Va., are preparing plans, will be 42x90 feet and cost $50,000. Bids will be received as soon as plans are completed.

PITTSBURGH, PA.—Thomas Reilly, builder, has been awarded the contract for a new rectory and parish house to be built at Pittsburgh for the Trinity Congregation, from plans by Carpenter & Crocker. The building will cost $75,000. It will be of Indiana limestone, the interior finished in oak.

Architect F. C. Saur will shortly begin work on plans of the building to be erected at Shady Ave. and Aurelia St., East End, by the Natatorium Company. The building is to cover the entire lot, 120x150 feet, and will cost at least $100,000.

The E. M. Schmidt property in the 20th Ward has been purchased by the Homeopathic Hospital for $100,000. It consists of about 4 acres on the west side of Center Ave., near Liberty. This will be the site of the new hospital long contemplated, and toward which the State has been asked to contribute $200,000.

PHILADELPHIA, PA.—A $60,000 building will be erected for the University of Pennsylvania from plans by Horace Trumbauer. It will be of brick and stone, modern in all respects.

PHILADELPHIA, PA.—An operation of 34 2-story dwelling houses is to be started by Owner and Builder Wm. H. Allen. Approximate cost, $90,000.

PORTSMOUTH, N. H.—Sealed proposals will be received at the Bureau of Yards and Docks, Navy Department, Washington, D. C., until March 11, 1905, for furnishing and installing two electric elevators at the navy yard, Portsmouth, N. H.

ROCHESTER, N. Y.—Plans and specifications for the new State armory in Rochester have been completed by the State Architect, and bids for the erection and equipment of the building are desired by the State Armory Commission. They will be received until March 21 at the office of the Commissioner in the Capitol, and the drawings and estimates may be seen in the State Architect's office there. The bids solicited are for construction, structural steel, heating, plumbing, electric light wiring fixtures and gas piping. The cost of the building will be in the neighborhood of $300,000.

SACRAMENTO, CAL.—A bill has passed the Senate appropriating $250,000 for improvements at the California Polytechnic School.

ST. LOUIS, MO.—J. L. Howard, 620 Chestnut St., has drawn plans for building to be erected by the Columbia Transfer Co.; structure to be 4 stories, 90x120 feet, slow combustion, equipped with steam heat and electric lights. Cost, $55,000.

It is stated that the Stix, Baer & Fuller Dry Goods Co. has purchased the Lindell Hotel site and is having plans prepared by

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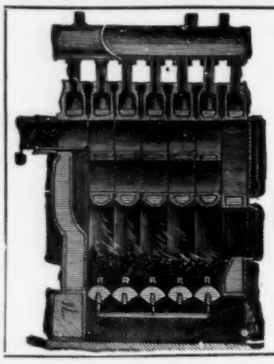

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Mauran, Russell & Garden for an 8-story fireproof building costing $1,500,000. Fifteen elevators will be installed, together with filter plant, sprinkler system, pneumatic tubes and all modern appliances. It is stated that the Westlake Construction Co. has been awarded the contract for erection.

St. Louis, Mo.—Plans will be executed by Mauran, Russell & Garden, Chemical building, for an 8-story fireproof mercantile building to be erected on the present site of the Lindell Hotel, 6th and Washington Ave., by the Emporium Realty Co. The building will cost $1,250,000.

It is reported that an office building will be erected on the site of the Second Presbyterian Church, by a syndicate composed of Logan Hay, Frank, Harry and Chester Ide. Cost, $80,000.

It is rumored that the Third National Bank will erect a $1,000,000 building on the southwest corner of Broadway and Olive St.

Theodore C. Link, Carleton building, has drawn plans for the Carnegie library branch, Lafayette and Jefferson Ave. Cost estimated at $75,000.

Architect J. L. Wees, Commercial building, has drawn plans for a 3-story modern hospital for the Association of Evangelical Deaconesses, to be erected at the corner of Bell Ave. and Sarah St. Cost, estimated, $100,000.

St. Paul, Minn.—G. Sommers & Co. will erect a 7-story business block, 150x150 feet, at 6th St., near the Wacouta. Cost, $200,000.

Dr. Robert O. Earle, St. Paul, and Dr. Frank Peterson, Minneapolis, are reported interested in the erection of a $60,000 sanitarium on Dayton's Bluff.

Somerset, Ky.—Reports state that the Cincinnati, New Orleans & Texas Pacific Railway will shortly begin the erection of its proposed shops to cost about $1,000,000. Address Wm. Doyle, Superintendent Bridges and Buildings.

Toledo, O.—The Toledo Board of Education, George McKesson, business manager, has announced that it will expend $75,000 in the erection of additions and new school buildings this summer.

Toledo, O.—Architect D. L. Stine, 405 Valentine building, is making plans for a flat building for George H. Allen, of Allen & Parkhurst Company. It is to be 3 stories in height, contain six modern flat suites and be otherwise modern throughout. It is to be of frame construction with cement exterior. The cost will be about $25,000.

Architect A. B. Sturgis, 702 Spitzer building, is preparing plans for a number of modern residences, bids for the erection of which he will receive within the next 30 days. The houses will be modern and average about $4,000 each.

Architect A. B. Benton, Los Angeles, Cal., is visiting various Y. M. C. A. buildings, prior to drawing plans for a $300,000 building which is to be erected this year in Los Angeles, Cal.

Architect George S. Mills, 505 Gardner building, is drawing plans for a 3-story pressed brick flat building to be erected by Irving Squire. It will be heated with steam, be modern throughout and cost $50,000.

Architects Bacon and Huber, 755 Spitzer building, have awarded the general contract to Spieker & Co., Schmitt block, for the erection of the $100,000 flat building for A. W. Colton. A large portion of it will be sub-let.

Union Hill, N. J.—The largest theatre in the State is soon to be erected here by the Klein estate. The construction will be iron, brick and stone on the cantilever method, thus obviating the use of posts in the balcony and lower floors. The stage will be 75 feet wide by 42 feet deep and accommodate the heaviest productions. The front part of the building will be devoted to stores and offices.

Washington, D. C.—The Board of Directors of the Metropolitan Club, 17th and H Sts., N. W., has decided to replace building recently burned with a $250,000 one.

Architects have been requested to prepare plans, which are to be submitted by March 15, for a group of 13 buildings for George Washington University. They will be located on square bounded by Virginia Ave., C St., 18th and 17th Sts., N. W. Estimated cost will be as follows: An administration building $500,000; an alumni hall, $150,000; a hall for law, politics and diplomacy, $150,000; Corcoran Hall, $125,000; a hall for the school of architecture, $60,000; eight dormitories, to be separate or in block, $150,000.

The Oblates, a community of Catholic missionaries whose history is identified with the civilization and settlement of the great Northwest, have purchased nearly five acres of land close to the Catholic university in this city. It is understood that two buildings will be erected on the new site, one for a novitiate and the other for a college to train missionaries.

The George A. Fuller Company has received the contract for the erection of building for the Washington Times; structure to be 11 stories, 70x159 feet, and cost $450,000. McKim, Mead & White, 160 Fifth Ave., New York, N. Y., architects.

Washington, D. C.—Proposals will be received at the office of the Superintendent of United States Capitol Building and Grounds, Washington, D. C., until March 11, 1905, for the sale and removal of buildings and other material on Square 686, Washington, D. C., the site of the office building for the United States Senate.

Sealed proposals will be received at the Department of the Interior until April 15 for the construction of frame schoolhouses and teachers' residences at the following points in Alaska: Carmel (Bristol Bay), Seldovia (Cook Inlet), Wood Island (near Kodiak); also at Yakutat, Haines, Killinoo, Wrangell and Jackson, in Southeastern Alaska. Information supplied on application to the Department.

Washington, D. C.—It is reported that a 5-story cold storage plant will be erected at 11th and X C Sts. by Lewis Hopfenmaler, at a cost of $300,000.

Winchester, Ky.—It is reported that the Kentucky Wesleyan College, burned at a loss of $75,000, will be rebuilt.

Wyandotte, Mich.—The Legislature has passed an act authorizing the Board of Education to issue $50,000 of bonds for a high school building.

Williamsburg, Pa.—A local firm has secured from C. M. Schwab the contract for building 50 houses near his mills at Williamsburg. The contract price is $100,000, or $2,000 apiece.

Youngstown, O.—A new union station will be built here by the Erie and the Pittsburg & Lake Erie Ry. companies. It will be of brick and stone. Cost, $175,000.

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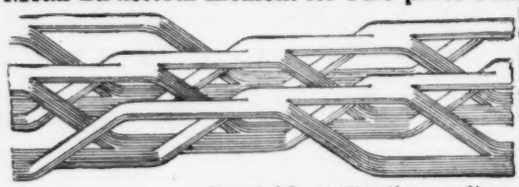

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Richey, Browne & Donald, Maspeth, L. I., New York City.
United States Foundry and Sales Company, South Norwalk, Conn...
Winslow Bros. Co., The, Chicago, Ill.

PAINT.
Algonquin Red Slate Co., Worcester, Mass.
Joseph Dixon Crucible Co., Jersey City, N. J.
New Jersey Zinc Co., New York.

PHOTOGRAPHS.
J. W. Taylor, Chicago, Ill.

PHOTOGRAPHY (Architectural and Commercial).
Dadmun, Leon E., Boston.

PLASTER ORNAMENTS.
Samuel H. French & Co., Phila., Pa.

PORCELAIN ENAMELLED WARE.
Sanitary Standard Mfg. Co., Pittsburgh, Pa.

PUMPS.
Rider-Ericsson Engine Co., New York.

RADIATORS.
Shirley Radiator & Foundry Co., Indianapolis, Ind.

RANGE CLOSETS.
Standard Sanitary Mfg. Co., Pittsburgh, Pa.

REFLECTORS.
I. P. Frink, New York.

ROOFING MATERIALS.
Barrett Mfg. Co., New York.
See also Asphalt Roofing.

ROOFING TIN.
American Tin Plate Co., New York..
Taylor Co., N. & G., Philadelphia, Pa.

SASH-CORD.
Samson Cordage Works, Boston.
Silver Lake Co., Boston.

SCHOOLS OF ARCHITECTURE.
Lawrence Scientific School, Harvard University, Cambridge, Mass.
Massachusetts Institute of Technology, Boston.
Ohio State University, Columbus, O.
Society of Beaux-Arts Architects, The, New York.
University of Pennsylvania, Phila., Pa.
Washington University School of Engineering and Architecture, St. Louis, Mo.

SEAM-FACE GRANITE.
Gilbreth Seam-face Granite Co., New York.

SEAMLESS TUBING.
Benedict & Burnham Mfg. Co., Waterbury, Conn.

SHEET-METAL WORK.
J. S. Thorn Co., Phila., Pa.

SHOWERS (Permanent & Portable).
Standard Sanitary Mfg. Co., Pittsburgh, Pa.

SHUTTERS (Steel Rolling).
Kinnear Mfg. Co., The, Columbus, O.

SKYLIGHTS, ETC.
George Hayes, New York.
Valle & Young, Baltimore, Md.

SPRING LOCK.
Sargent & Co., New York.

STABLE FIXTURES.
Broad Gauge Iron Stall & Vane Works, Boston.

STAIR TREAD.
American Mason Safety Tread Co. Boston.

STEAM-PIPE COVERING.
Keasbey & Mattison Co., Ambler, Pa.

STEEL ROLLING-DOORS.
Kinnear Mfg. Co., The, Columbus, O.

TANKS.
New England Tank and Tower Co., Boston, Mass.

TERRA-COTTA.
The Northwestern Terra-Cotta Co., Chicago, Ill.

TILES (Interlocking).
N. Y. Belting and Packing Co., Ltd., New York.

TRAPS.
Cudell, F. E., Cleveland, O.

URINALS (Porcelain Enamelled).
Standard Sanitary Mfg. Co., Pittsburgh, Pa.

VALVES AND PACKING.
Crane Co., Chicago, Ill.
Jenkins Bros., New York.

VARNISH.
Edward Smith & Co., New York.

VENTILATION.
Globe Ventilator Co., Troy, N. Y.

VIMOMETERS.
Standard Sanitary Mfg. Co., Pittsburgh, Pa.

WALL COVERINGS.
Richter Mfg. Co., Tenafly, N. J.

WATER FILTER.
Loomis-Manning Filter Co., Philadelphia, Pa.

WATERPROOF CELLARS.
Gilbreth, Frank B., New York.

WATERPROOFING.
Barrett Mfg. Co., New York, N. Y.

WEATHER VANES.
T. W. Jones, New York.

WINDOW LINE.
Samson Cordage Works, Boston.

WIRE GLASS WINDOWS.
George Hayes, New York, N. Y.
James A. Miller & Bro., Chicago, Ill.
L. & R. Wister & Co., Philadelphia.

ZINC WHITE.
New Jersey Zinc Co., New York.